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ISSUE 252 NOVEMBER 2002 £4.20

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RiscStation XG card & cable	£116.95
RiscStation XG card, cable & keyboard	£245.95
Sibelius 6	£99.95
Sibelius 7 Student	£319.95
Sibelius 7	£520.95
Sibelius 2 for PC/Mac is also available	
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Second hand machines:

These machines have mainly come from schools and businesses. As such there are various brandings, labels, markings, scratches, very occassional broken bits (e.g. front flaps) on the cases. All machines have been generally cleaned and air dusted inside to get rid of most of the dust, however the cases have not been meticulously cleaned as this would take a long time and increase the prices considerably. Any machines which have PC cards are usually 486 cards, but as these are basically worthless, their value has not been taken into account (and they might not have all the software on the disc to work them anyway).

Get free carriage if you also take a monitor (the 'b' indicates an additional £10 carriage charge). Keyboard, mouse and mains cable included. Single slice machines do not have backplanes unless specified; two slice machines have four slot backplanes. Ethernet cards etc. can be taken out if not required. There is a three month warranty on these machines and they are supplied 'as seen', so to speak. All details are subject to change and please check availability before ordering.

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RPC SA, RISC OS 3.7, 16+1Mb, 406Mb HD, Combi ethernet card	£290.00b
RPC SA, RISC OS 3.7, 16+1Mb, 203Mb HD, Combi ethernet card, CD drive, PC card	£300.00b
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RPC SA, RISC OS 3.7, 16+1Mb, 203Mb HD, Combi ethernet card, CD drive	£300.00b
RPC SA, RISC OS 3.7, 20+1Mb, 203Mb HD, Combi ethernet card, CD drive	£300.00b
RPC SA, RISC OS 3.7, 20+1Mb, 203Mb HD, Combi ethernet card, CD drive, PC card	£300.00b
RPC SA, RISC OS 3.7, 20+1Mb, 203Mb HD, Combi ethernet card, Cumana CD drive	£300.00b
RPC SA, RISC OS 3.7, 20+1Mb, 203Mb HD, Combi ethernet card, CD drive, PC card	£300.00b
RPC SA, RISC OS 3.7, 24+1Mb, 203Mb HD, Combi ethernet card, CD drive, PC card	£300.00b
RPC SA, RISC OS 3.7, 20+2Mb, 406Mb HD, Combi ethernet card, CD drive, two slice	£310.00b
RPC SA, RISC OS 3.7, 12+1Mb, 2014Mb HD, Cumana CD drive, 10BaseT ethernet, PC card	£320.00b
RPC SA, RISC OS 3.7, 16Mb, 406Mb HD, Ultimate card & CD drive, Combi ethernet card, XOB Teletext card, backplane	£350.00b
RPC SA, RISC OS 3.7, 48+2Mb, 1032Mb HD, CD drive, Combi ethernet card, Cumana SCSI II card with noisy 2Gb SCSI HD, two slices	£410.00b
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November 2002 Issue 252



Editor's Comment

Eternal optimism is the key to a happy life. A pessimist may be right more often but an optimist has more fun. As Steve Turnbull once said "I wouldn't be able to do this job if I didn't believe we could win".

I am very happy to say that the the first steps in that "winning" have been taken. There are a lot of them and some of them we still can't tell you about but the movement is finally beginning to occur.

It was about this time last year that we discovered that Simtec were working on a USB card, and it was at the Wakefield Show that suddenly Castle popped up with theirs, with versions they were handing out to developers.

Mike Cook got one and he has been working with it over the past months, unfortunately the software side (as I write) had still not been finalised. But Simtec have announced the release of their card, and there is a review in this very issue.

Hardware is the key to the future in different ways. New software is nice, of course, but it is a fact that new hardware is the thing that makes us users really sit up and take notice, and spend money.

I admit to being a fan of the 70's band Steely Dan, I'm listening to some of their earliest music, and the track playing right now has the title: "There's more to come".

Rob Donaldson
Editor

Next issue on sale: 7th November 02

Published by



28a Middle Hillgate
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Tel: (+44/0) 161 429 8902
Fax: (+44/0) 161 429 0685
Printed by The Manson Group, St Albans

Editor Rob Donaldson

Finance Manager Gary Duxbury
Distribution COMAG (01895 444055)
Advertising Steve Turnbull
Managing Director Sharon Henderson

Subscriptions:
(+44/0) 161 429 8902
E-mail: subscrip@acornuser.com
Annual (13 issue) subscription rates:
£46.99 (UK) £51.99 (EU) £63.99 (World)



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SEE June Issue for ;

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ARM bigger than BA

ARM Holdings is now officially bigger than British Airways. The microprocessor firm is the 110th largest listed company in the UK valued at £1.462bn just ahead of BA at £1.461 which meant that under FTSE rules, BA being at 111th was "relegated" from the FTSE100.

Although good news for the company, it doesn't seem to have help push up the stock price which were still hovering just about their recent low of £1.20.

Meanwhile Pace shares continue to plummet, seeing the Set Top Box manufacturers value fall for the 6th consecutive month with prices at press time around 17p per share.

Simtec USB available

Simtec Electronics have announced the immediate availability of their USB interface for RISC OS machines (reviewed elsewhere in this issue). Basic cards with drivers for mice and keyboards cost £79 plus VAT and carriage from various dealers and developers. Full information on the interface card can be found at www.simtec.co.uk

Details of development partners, supported devices and API information can be found at www.riscos-usb.com The card itself has a standard two USB sockets and the necessary drivers to run a mouse and a keyboard.

Stuart Tyrrell Developments is offering a free four-port USB hub with any Simtec card bought from him which expands the total sockets to five. This offer is available until the 31st October. Happy Halloween.

Meanwhile, Microdigital have announced that the Omega will also use the same API as the Simtec card (which is also the same interface that will appear in the Riscstation Portable). This means that the Castle card is somewhat on its own in terms of API, with software that is not yet stable at the time of writing.

It remains to be seen how Castle resolve this issue, or whether someone comes up with some bridging software which will allow drivers written for the Simtec API to work on the Castle USB podule. Or vice versa. Or both.

User group meetings

The next Wakefield Club meeting is on Wednesday 6th November 2002 at 7:45pm which sees a visit from Stuart Tyrrell. Stuart will have plenty of products to talk about, including all sorts of interfacing adapters and upgrades such as network and USB cards. See www.wrocc.org.uk for meeting location and updates

Dates for the Southampton Acorn Users Group for the rest of this year are: October 14th, November 11th, December 9th. Exact programmes will be announced nearer the dates of the events.

Visit www.aaug.net for all the worldwide user group details.

New ICA client anyone?



Mike Gilbert from TME is looking for a group of interested parties to combine to fund the development of a fully featured and working Citrix ICA client supporting higher resolutions and greater colour depth. The parties in question could be resellers or customers. The sums in question need not be huge, although probably more than a single user would be prepared to pay.

The reason for the request is that under the terms of the Citrix client licensing, the finished client could not be re-sold as a commercial product. It would be expected that it would be available for download from the Citrix Web site alongside the clients for other operating systems.

Anyone interested in Mike's offer should contact him at mgilbert@tme.co.uk or write to: Mike Gilbert, TME (South West) Ltd, 5-7 South St, Wellington, TA21 0AU UK

New and updated

EXIFinfo is a new utility of interest to owners of digital cameras, available from the Vermilion Sands Photodesk resources site.

EXIFinfo generates files containing the information hidden inside the EXIF files (JPEGs) produced by digital cameras. The program can make anything from a simple text summary to a Web page complete with thumbnail images and, because it uses script files, it can be made to produce just about any format you want.

It is not useful for ordinary JPEGs, or images of any other kind. Extensive help is provided, and a simple StrongEd colouring mode for script files is also included in the package. Vermilion Sands do warn that this is still in beta and contains bugs, some known and many doubtless to be discovered so use it at your own risk.

EXIFinfo can be obtained from www.photodesk.iconbar.com

The seventh release of PsiFS is now available for free download from: www.thouky.co.uk/software/psifs/

The most significant change from version 1.50 is the ability to print from EPOC devices via any RISC OS printer driver. This uses the "Printer via PC" option to print via the PLP (Psion Link Protocol). Full support is included for previewing print jobs, and exporting as Draw files or plain text.

PsiFS is a freeware RISC OS file system that communicates with a remote SIBO or EPOC device via the PLP. Files can be manipulated as if they were on a local hard disc, albeit a slow one, so copying is simply a matter of dragging icons between filer windows.



GnuPG is a complete and free replacement for PGP, the email encryption tool. Because it does not use the patented IDEA algorithm, it can be used without any restrictions.

GnuPG itself is a command line tool without any graphical user interface, so it can be used directly from a command prompt, from obey scripts or by other programs. Features of the latest version include:

- Full replacement of PGP
- Does not use any patented algorithms.
- GPLed, written from scratch.
- Full OpenPGP implementation
- Better functionality than PGP and some security enhancements over PGP 2
- Decrypts and verifies PGP 5, 6 and 7 messages

• Supports ElGamal (signature and encryption), DSA, RSA, AES, 3DES, Blowfish, Twofish, CAST5, MD5, SHA-1, RIPE-MD-160 and TIGER. (and optionally, not GNU anymore, you can use IDEA as well)

• Supports key and signature expiration dates

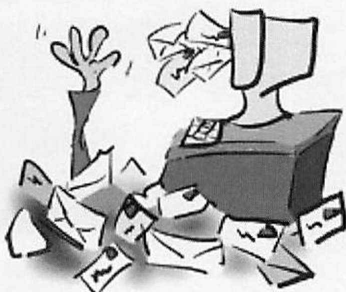
• Integrated support for HKP keyservers (wwwkeys.pgp.net)

• Support for LDAP keyservers via plug-in

• Support for photo IDs via plug-in

Messenger Pro 2.50 already supports GnuPG in a beta stage, later versions (2.60 onwards) have GnuPG support in release quality. Pluto has also supported GnuPG since version 2.04 and the author would like to hear from other other e-mail software authors if they wish to support GnuPG in their software.

The software can be downloaded from Stefan Bellons' Web site at **www.sbellon.de**



The latest version of the popular spam-filtering application, Mailscout 1.10, includes a number of bug fixes and enhancements to the user interface as well as offering the facility of auto-flagging e-mails containing foreign (top bit) characters. This allows MailScout to automatically flag for deletion spam originating from Far East countries.

MailScout provides client-side anti-spam and on-line e-mail interrogation facilities for RISC OS users, allowing you to scan your mailbox and remove spam/unsolicited mail directly off the server without the need to download it. MailScout supports both IMAP and POP3 protocols and comes complete with integration tools for Voyager and DialUp, NetFetch and POPstar.

Image Software have already released a Windows version, for those who wish to filter Spam on their PCs. Both versions of MailScout are available at £25 (fully inclusive of VAT and UK P&P).

For more information, or to place an order contact Image on 01202 269720 or see **www.imagesoft.co.uk**

Accounts anyone?

This month sees several new and updated accounts packages for RISC OS. Whether you are doing your personal, family or small business accounts, there is a broad range of RISC OS software to suite.

Account2 v.1.22

The freeware Home Accounts application has been updated with some bug fixes and new features :

• QIF file import as well as export is now possible from programs such as Quicken or Money.

• Reconciled balance of individual categories is now displayed in sub-accounts. Reconciliation is now possible from a sub-account window.

• Abbreviation, category and option files are now placed in a new directory "user" (or !Boot:Choices) to avoid upgrades overwriting user data.

• Larger totals are displayed (up to £999,999.99 in individual entries and £9,999,999.99 in balances) for those Lottery wins.

• More reports of spending patterns and predictions, budgeting and cash flow can be created. Budgeting calculations are more accurate.

• Only changed balances are displayed.

• Splitting a transaction amount between several categories has been simplified.

• Main window is now immediately updated after editing a transaction in a sub-account window.

• A message is given when trying to load a protected account.

• Random extra blank rows no longer added when editing sub-accounts, importing CSV files or when direct debit transfers are automatically created. This has also cured the occasional danger of post-dated entries being overwritten.

• Category monthly credits and debits in the budgeting window were the wrong way round. This is now cured.

Account2 is available from the authors' Web site at **www.ksedwards.ukgateway.net/account2/**

EnBank 2.02

The multi-currency accounts package for RISC OS 3.5 and above, is now available from the RISC OS pages of the EnVision Software web site: **http://riscos.envision-software.co.uk/**

• CSV/TSV Export. Transaction data can now be exported as a Comma/Tab Separated Values from the Transaction Audit and Statement-of-Account views.

• CSV/TSV Import. Transactions can now be imported from CSV/TSV files. Dragging an appropriate file onto the main Account view opens the Data Import view. From this view you can map the parts of the import data you wish to use to build the transactions. You can use Javascript to manipulate the import data and to build new columns to provide information that was not present in the import file

• Exchange Rate Type column has been added to both the Transaction Audit and Statement-of-Account views. As with all columns you can Sort and filter data on this column.

• Improved flexibility on Transaction Edit. For non-verified transactions all fields including the From/To accounts may be modified. Changing the transaction type is now consistent with the functionality offered when Adding a transaction. Part verified transactions now permit data not related to the verified account to be changed. Fully verified transactions can now have their analysis Group and Class changed.

• Optimise Utility. Launched from the IconBar menu this new utility can improve performance when opening a Statement-of-Account view.

The Base Unit, Basic Home Use is free of charge and offers a maximum of five accounts, ten standing orders and 500 transactions).

Base Unit, No restrictions on data volume, £7.50

Multi-currency Extension, £5.00

Budgeting Extension, £5.00

Base unit, multi-currency & budgeting bought together, £15.00

EnVision also offer a 60-day evaluation license get full details from their Web site **www.envision-software.co.uk**

Enterprise Accounts

Industrial Logic have released "Enterprise Accounts". Consisting of a range of programs designed to meet the many needs of the small to medium-sized business. It provides professional integrated accounts that claim to have been "designed by a businessman to meet the needs of the businessman"

For RISC OS 3.1 and above, the suite offers a large range of features including:

• Integrated Sales, Purchase and Nominal Ledgers which can be extended as the needs of the business grow

• Fully Integrated System avoids repetitive entries

• Prints Invoices, credit notes, statements, remittance advice

• Prints profit and loss account and balance sheets

• User defined layouts of all printed documents

• All reports can be sent to the screen,

Need access to a PC but don't have space for a new monitor, keyboard and mouse?



STEP 1 - Specify a PC base unit if you don't have one

We can supply off-the shelf or custom PC base units to your requirements.

eg:
- Duron 1.1GHZ CPU, 128MB memory, 40GB hard drive, CD drive, 8-64MB graphics £499inc VAT and Delivery
- Athlon XP 1800+ CPU, 256MB DDR , 60GB ATA133 hard drive, DVD, CD rewriter, Geforce 2MX400 graphics £799inc VAT & Delivery

All machines come with internal modem, our Multimedia Keyboard, Wheel mouse and Loudspeakers.

- Windows ME or XP, add £80inc VAT, MS Works, add £20inc VAT.

STEP 2 - Add our Keyboard Controlled Switch

This miniature switch allows keyboard, monitor and mouse to be shared between two machines.
Modified for RISC OS macines, rated to 1920x1440 display, complete with all cables.

- Supplied as a pack including our PS2MouseMini interface : £99.95inc VAT (Was £113.90)
- Above pack when purchased with PC base unit: £90inc VAT (was £100)
- Keyboard Controlled switch alone: £89.95inc VAT (was £99.95)
- PS2MouseMini Interface (allows PC mice to be used on RISC OS machines): £18.95

(not to scale - it's about the size of two kitchen machboxes!)

STEP 3 - Attach to your existing RISCPC/A7000 and monitor

Add a networking pack if required.......
... and switch between the two with a couple of keypresses.

Mices! MMK! USB!



- STD Standard Mouse £19.95inc (Acorn mouse port, PS2Mini not req.)
- 3 button PS/2 mouse £5.95inc
- Genius Wheel mouse £12.95inc
- Genius OPTICAL mouse £17.95inc

Non-A7000 machines require our PS2MouseMini interface £18.95inc.



- Multimedia Keyboard
- For RISC PC / A7000 etc
- 19 Multimedia keys
- Complete with Drivers
- Click/non click versions

£24.95 inc VAT (was £34.95)



- Simtec USB Card.
- Supplied with keyboard mouse and joystick drivers.
- Drivers for other devices Available.

£79+del+VAT = £99inc

disc or printer

• Automatic entry of date, comprehensive Batch Number system
• Unique 'Cashup' facility for Retail businesses
• Full VAT facilities and printout of VAT Return
• Automatic Standing Orders facility
• Double Entry accounts with Audit Trail and Trial Balance
• Integrated stock control for stock holdings & values (Professional only)
• Integrated Payroll calculates tax & N.I. and payslips (Professional only)
• Mailing program prints labels and letters and custom reports (Professional Only)

Pricing details are:

Enterprise Accounts (Sales, Purchase & Nominal Ledgers) £150.00

Enterprise Professional (Sales, Purchase Nominal Stock & Mailer) £200.00

A demo version can be downloaded from Robert McCanns' Web site at: **http://users.argonet.co.uk/users/RMcCann/**

No compromise on DVD standard

Two industry groups supporting conflicting standards for rewritable DVDs have apparently given up on resolving their differences and settling on a single standard. The DVD+RW Alliance and the DVD Forum support different formats, and there are at least four types of discs, causing headaches for consumers and device manufacturers.

The result is an alphabet soup of formats and media that consumers must keep straight: DVD-R, DVD-RW, DVD-RAM, DVD+RW, DVD+R. Pressure from companies, including Intel, may eventually push the two DVD organisations to find a compromise. but not yet.



Emoticon turns 20

Twenty years ago, Dr. Scott E. Fahlman thought turning his head sideways might drastically improve his ability to communicate. The result of his tipped thinking is now world famous: the "smiley emoticon" :-) used by millions in e-mails and electronic postings to indicate: "Hey, I'm only kidding" or "I'm smiling." Tilting one's head to the left reveals the happy face.

The first smiley was created by Dr. Fahlman, then a computer science research professor at Carnegie-Mellon University in Pittsburgh, USA and now an IBM researcher, to prevent the frequent misunderstandings that occurred when one person's joke or sarcasm posted to a local electronic bulletin board was unwittingly taken seriously by others.

It was an immediate success. Widely distributed over the primitive computer networks of the day, the smiley was adopted worldwide and has spawned an entire vocabulary of emotion-indicating smiles, retorts and other graphic elements constructed of a single line of simple keyboard characters.

Dr. Fahlman's colleagues at CMU recently unearthed the original e-mail and discussion from September 19th, 1982, which can be viewed at his web site: **www-2.cs.cmu.edu/~sef/**

E-mail, a "busman's holiday"

Approximately 73% of British business people access their work e-mail account or corporate network while on holiday. Over half said that they had taken a PDA or a laptop with them on holiday, while 92% take their mobile phones. Almost half said being able to access their corporate networks gave them peace of mind while they were away. However, they admitted that it caused problems or tensions with their holiday companions.

Change at csa.announce

Stuart Marshall, of Spidersoft and Cybervillage fame has resigned as Moderator of the comp.sys.acorn.announce newsgroup. Stuart has been moderator of the newsgroup since 1997, which has seen many important events come and go in the RISC OS world.

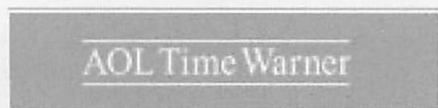
Andrew Conroy, the previous backup moderator takes over the helm, which means there are some new submission e-mail addresses :

Submissions to **csaa@owlart.co.uk**

Related e-mail to **csaa-request@owlart.co.uk**

Nick Boalch is the new backup moderator.

Movies online



AOL Time Warner's Warner Bros. Movie Division became one of the first major Hollywood studios to allow consumers to download its movies from the Net. In a deal with Web site **CinemaNow.com**, Warner will offer films such as last year's blockbuster Harry Potter and the Sorcerer's Stone for about $4 online.

Other movie distribution deals, such as MovieLink, a Web venture of Warner, MGM, Paramount, Sony Pictures and Universal, are also beginning to take shape. MovieLink executives said they have signed an agreement to use technology from IBM to distribute movies over the Internet. The move will help finally launch the MovieLink Web site by the end of the year.

The good news about this service is that the studios are trying to get out ahead of the file swappers and use the Web to distribute their products. Digital Rights Management software embedded in the downloaded movies prevents the movies from being copied and controls the period during which the movie will play on the PC.

The bad news is that the technology has lots of drawbacks. Movie files, even though they're digitally compressed, and suffer some loss in quality, are still about a gigabyte in size. So it takes at least a few hours to download a movie. Compare this to Pay Per View, where the selection is limited, but the movie is available instantly.

A device such as TiVo, which is connected to both cable and a TV, can more quickly store and download analogue data. So it is more sensible as a video capture and storage device. But TiVo devices have little in the way of DRM controls today and selection is limited to what the cable companies put on the air.

So far, it looks like there's no breakaway technology to replace your local video store. Another major downside is that any DRM software that is used is likely to be closely kept under wraps by the studios, meaning porting it to other operating systems such as RISC OS and Linux will be extremely difficult if the source code isn't available.

Wireless world for Intel

Intel's strategy for desktops, notebooks and handhelds can be summed up in one word: wireless. In desktops, Intel said that it would work with Sony, Microsoft, and other manufacturers to solidify standards for the so-called Extended Wireless PC, which will wirelessly hook up to TVs, stereos, and other home-entertainment devices. Such PCs will begin to emerge toward the end of this year.

In notebooks, Intel provided more details on "Banias," a new mobile processor coming in the first half of next year. Among other features, Banias notebooks will come with integrated dual band Wi-Fi (802.11 a and b) wireless networking. Intel also plans to introduce a major expansion of the capabilities of its XScale processors, used in the Microdigital Omega and handheld devices such as H-P's iPaq. The chip will understand a set of new instructions, called Wireless MMX, to help it decode video, convert speech to network data, and play 2D and 3D games.

Many PC makers hope that wireless will become the "killer app" that will revive the PC market. The explosive growth in mobile phones, the continuing strength in the notebook market, and consumer interest in products such as personal video recorders and home networking make it clear that an opportunity exists.

Computer makers would like to drive the corporate market away from heavy desktop to the more profitable portable computer as the standard for corporate computing. But most corporate desktops don't require portability and wired networks are more secure, have higher capacity, and are lower cost for already wired office space. The killer, in today's cost constrained environment, is that immobile desktops require less desktop support.

Intel goes 3D



Intel said an experimental three-dimensional transistor design would shrink the size of semiconductors, increase their speed, and lower their power consumption. Intel's new "tri-gate" transistor increases the surface area through which electricity can travel without increasing the size of a chip.

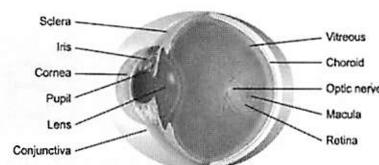
Tri-gate technology is based on a three-dimensional design that treats a transistor like a raised, flat surface with vertical sides. This triples the surface area electrical pulses can use to travel. Electricity passes only through the upper surface of a conventional semiconductor. The technology also reduces electricity leakage and saves power.

Transistors are the millions of switches on semiconductors. They amplify a signal or open and close a circuit on chips. While adding more transistors speeds up a computer's processor or adds to the computer's memory, the size of the chip increases and it consumes more electricity under normal circumstances.

As CPU chips approach a billion transistors in size, the number of transistors on a chip, when combined with the growth in the wafer size means that computer chips are starting to become enormous users of power. This is one of the main reasons why the ARM RISC design is ideally suited to mobile applications ‹ because of its RISC architecture, it needs less transistors to perform the same task as an equivalent CISC (ie Pentium style) chip.

More important than the environmental impact and the operating costs involved, the extra heat means that computers are reaching the limits of the cooling that can be achieved with fans and heat sinks. This heat problem is showing up first in laptops, where the extra juice drains batteries and makes the computers too hot to touch. So Intel's development will allow more transistors to be packed onto silicon wafers without enlarging the chip's size.

Retinal chipset



Researchers are close to an eye implant that restores sight to the blind. The chipset is aimed at those suffering from macular degeneration and retinitis pigmentosa, where the light-sensitive cells on the retina stop working but the nerves survive. The project is due to finish in 2004, by which time the team hope the picture will be up to 33x33 pixels, enough to distinguish text and faces.

A spectacle-mounted camera takes video that is then processed and transmitted into the eye by radio. There, a chip made from micro-machined silicon receives the signal and extracts data with which to stimulate the retinal nerves.

The Multiple-unit Artificial Retinal Chipset (MARC) receiver sits on top of the retina, making direct contact with the nerves through a 10x10 array of electrodes. MARC extracts the power it needs to run from the radio signal, removing the need for any external wires or internal power pack.

Macular degeneration is a common cause of blindness in old age. So this technology holds the promise to eventually become as common as cataract surgery, which is now done on an outpatient basis. From a technology perspective, this is evidence that the advances in power and miniaturisation can lead to spin-offs far from the original purpose.

Many problems and questions remain, such as the best waveform for stimulating the nerves, the best way to package the chip to keep it and the eye healthy, the best way to connect the chip to the retina, and how to transmit colour images. Nonetheless, the direction is pretty clear. Miniaturisation, particularly with the development of microscopic nanomachines, will see computers migrate to assume an increasingly important component of our "inner selves."

Visa readies wireless smart cards

Visa International is making a push with a new smart-card payment system that would allow hands-free transactions. The credit card company said that it plans to set up a new system that uses smart cards fitted with radio-frequency chips (RFID tags) that will allow people to conduct a transaction, such as paying a subway fare or buying a soda, without having to fish for change or swipe a credit card. Visa will install the first such system in South Korea.

Visa says that wireless smart cards have the potential to make life easier for a range of users, such as commuters, who could use a card to pay their fare at subway turnstile instead of standing in line to buy a token. People would hold the card, or phone or other device containing a card, within about 10 centimetres of a terminal, which would use wireless transmissions to send payment information.

Smart card chips cost a few dollars, and the terminals that read them cost less than £80 each to build. Visa's cards will use wireless chips that conform to an international wireless standard known as ISO 14443. Visa doesn't plan to require users to carry a physical card. It would like to build the capability into PDAs or mobile phones.

Smart cards are popular in Europe but haven't taken off in the United States.

VISA The World's Best Way to Pay

Mail me but don't spam me

A 52-article discussion has been going in the newsgroups about the use of the mailto: tag. This HTML code element is used on a Web page to form an e-mail address hyperlink. When the link is clicked-on, the reader's mail editor program can be invoked already addressed to the required recipient.

Unfortunately, such published e-mail addresses act as a magnet for Web site scanning programs run by unscrupulous e-mail address-harvesting organisations, and the result is more and more spam to the page owner. The HTML source code for a mailto: link in its simplest form contains the required e-mail address in plain text like this:

```
<A HREF="mailto:comms@acornuser.com"
>comms@acornuser.com</A>
```

It's not difficult to detect e-mail addresses in the source code of a Web page. All you need to do is look for the "at" symbol, and get the text from either side. One suggestion given in the discussion was to hide the address using an alternative way of specifying textual characters in HTML. The ASCII value of a character can be used with a special introduction sequence and terminator, so that the "at" symbol, for instance, becomes "@".

There's a little BASIC program around (remember the Acorn User Yellow Pages?) that will do the conversion for you:

```
ON ERROR PRINTREPORT$;" at line
";ERL:END
PRINT "Enter email address to be
munged ";
INPUT ": "MUNG$
MUNGED$=""
FORI%=1 TO LEN(MUNG$)
  CHARA$=MID$(MUNG$,I%,1)

NEWCHARA$="&#"+STR$(ASC(CHARA$))+
";"
  MUNGED$=MUNGED$+NEWCHARA$
NEXT
MAILTO$=CHR$34+"&#109;&#97;&#105;
&#108;&#116;&#111;&#58;"
PRINT"This code can be added to
your HTML (Cut text below line)"
PRINT"--"
PRINT"<A
HREF=";MAILTO$;MUNGED$;CHR$34;">"
;MUNGED$;"</A>"
END
```

Unfortunately, neat though this is, not all (RISC OS) browsers will play ball and decode it for you. Another point to remember is that the harvester programs are probably just as good at looking for "@" as they are for the "at" character and the rest of an address hidden in this way, so is there any point in going this far?

The answer is probably no. So what other solutions are there? Paul Vigay suggested using instead a link to a cgi-bin server-side program to load another page containing the usual mailto: coding. This does get the e-mail address off the main page, but if a user can click on the link, so can a harvester, and many ISPs don't allow customers' own cgi scripts.

A particularly neat solution, but which is probably not entirely RISC OS proof either was suggested to me by the Webmaster of Totalrock.com. His Javascript implementation seems virtually immune from parsing by even intelligent harvester programs. A Javascript "include" text file saved as "email.js", sets variables to contain the link text and the parts of the address either side of the "at" symbol. It executes a single line of Javascript to print them inside a dynamic mailto: hyperlink, and looks like this:

```
var linktext= "E-mail me";
var email1= "webvisitor";
var email2= "mydomain.com";
document.write("<a href=" +
"mail" + "to:" + email1 +
"@" + email2 + ">" +
linktext + "</a>")
```

In the HTML page code, where you want the mailto: link to appear, write this:

```
<script
language="JavaScript1.2"
type="text/javascript"
src="email.js"></script>
```

I like it, how about you?

David Dade
comms@acornuser.com

In brief

A Bit Bigger

On this page a couple of years ago I described IPv6, the 128-bit IP allocation scheme that will replace the current IPv4 32-bit system. Eventually all the available IPv4 IP addresses will have been allocated, but by moving to the 128-bit system there will more than enough to give every atom on earth an IP address!

The ISP Andrews and Arnold now offers an IPv6 address allocation to its ADSL customers, implemented via an IPv4 tunnelling system through a Linux box or IPv6 router. A&A will be offering their business customers not one, not five, but 1,208,925,819,614,629,174,706,176 IPv6 addresses. LANs could become GANs, with the possibility of global access to every PC in every company. There are a few years to go until the whole 'net goes 128-bit but the security situation hardly bears thinking about. You'd better start now before the IPv4 addresses run out.

Andrews & Arnold Ltd
http://aa.nu/isp/ip6.html

Protected on all sides

Many will be familiar with the Internet security check site run by Steve Gibson at www.grc.com, and another security site worth checking is www.pcflank.com. Registered in St Petersburg and run by Michael Penkovsky, PC Flank's mission is to help protect your computer from Internet viruses and attacks by hackers.

You can test your system for vulnerabilities with PC Flank's six on-line tests which include browser, trojan and port scan tests. RISC OS is unlikely to fail the latter two, and if you are an ADSL user with a NAT router you can expect to pass almost every test. You can submit suspicious files for examination, and Ask The Experts at PC Flank for protection advice. The Web site also features a virus database and Security News, reviews of various PC firewall software and discussion forums on virus protection and Internet security.

PC Flank
www.pcflank.com/index.htm

Broadband goes live

Scottish Hydro-Electric has announced a trial scheme that delivers broadband Internet to subscribers through domestic wiring and power sockets. Running until December, the trial takes place only for customers in Crieff, Perthshire and Campbeltown, Argyll and Bute, but features free connection.

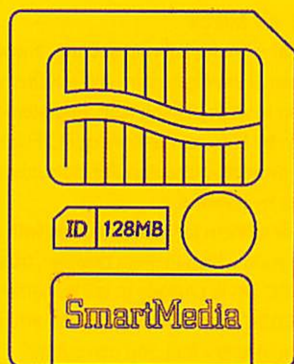
Monthly charges for the trial are £15+VAT per month in Campbeltown and £25 inc. VAT per month in Crieff, subsidised by the DTI and local Enterprise funds. Previous trials of similar mains-borne delivery systems were discontinued due to insurmountable problems with interference caused by street-lighting acting as huge aerials and by evening switch-on surges. Whether Scottish Hydro-Electric have overcome these problems will become evident during the trial.

Scottish Hydro-Electric Broadband
www.hydro.co.uk/broadband/

SALE

End of line sale - Hurry while stocks last!

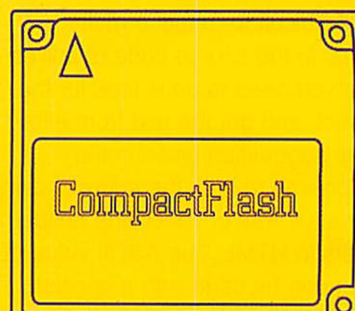
SmartMedia™ or CompactFlash™



DigiFlash, Surftec's range of CompactFlash and SmartMedia parallel port card readers for RISC OS systems.

Simply plug in, double click and away you go! DigiFlash shows an extra disc icon, allowing data to be copied to* and from the media just as if it was a floppy disc.

*SmartMedia is currently read only.



Add Photodesk's new Photoshow software for just £20! (£23.50 inc VAT).



DigiFlash

The data card reader for RISC OS

£67.23 exc VAT

£79 inc VAT

Add Warm Silence Software's excellent Win95FS software for just £25! (£29.37 inc VAT).



Surftec DigiFlash old price: £79.00 exc VAT, £92.82 inc VAT. Offer ends when stock has sold out.

To order:

We now accept credit and debit cards...









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Fax: +44 (0)1428 608123

E-Mail: sales@surftec.net
WWW: http://www.surftec.net

Positive posters

One of the best ways of learning about graphic design is to look at what other people have done. Note what works and, possibly more importantly, what doesn't. This does not mean wholesale copying of someone else's ideas, but in a general sense, replicating effective design schemes. Next time you see a wall of posters try to notice which ones stand out, and which ones you'd have to make an effort to read.

A poster is a picture or notice stuck on a wall, but posters have often been regarded as quality examples of popular art. There are posters which have become icons, others literally works of art. Posters are now an integral part of the mosaic which forms our everyday lives. They can be regarded as a nuisance, or a colourful element in a drab urban environment, or something to read on the bus, or, and this is their prime purpose, a method of conveying information about a specific event.

These do not have to be national events either; there is a tradition of making posters for local events from jumble sales to lost cats. Whereas before these might have been lovingly produced by hand, the rise of desktop publishing has multiplied the amount of amateur designers composing and printing posters for display in church halls, local shops and libraries. While it's great that posters can be produced by just about anyone, not all of them are fulfilling their purpose effectively. The poster needs to grab the individual's attention and draw them into reading the necessary details. If the artwork is bland and uninteresting, that's going to be all the more difficult.

In my opinion, one of the keys to producing a successful poster is the use of dynamic range. That is, choosing which elements of the poster to emphasise, and which can be played down. Let's take a simple example: we're going to design a one-colour poster to publicise a car boot sale. The first thing to do is write down all the information that's needed for the poster:

St Michael's Church
Car Boot Sale
Sunday 10th November 2002
10am-1pm
At the church hall car park,
High Street
Cars £5, admission free
Proceeds towards
the roof fund

Now, have a look at what you've written and grade the elements according to their importance. You want to mention who is organising the event, but it's not that important to the passer-by, so "St Michael's Church" doesn't have to be prominent. The most important element, "Car Boot Sale" will have to be what people see first, so that has to be clearly visible. Anyone interested will be drawn by these words, and will then make the effort to find out where and when. The date is quite important: it's good to see quickly when it is. The other minor details don't have to be hugely conspicuous, because people may read the poster to find out more. You might decide that that purpose of the event is worth mentioning, you may attract more people if they know it's for a good cause.

OK, you know what you want to say, but how do you convey it? With the super-abundance of fonts available to the modern computer designer, it's tempting to use fancy or interesting fonts but, if it's difficult to read, it's a waste of time. We don't want to have to work to read posters, and you may lose potential interest if you make us.

I have started by bounding the poster top and bottom with a dark border, defining the space between. In the top one I've placed "St Michael's Church", allowing it to become part of the design. It won't matter that your eye will not be drawn to it first. Then I've used a sans serif bold font in a large size for "Car Boot Sale". I want it to be seen from a distance. All other elements are secondary, because if you see it from the other side of the road, and you're interested, you'll cross the road to find out more.

Then I'll add a piece of clip-art, the car, to spice it up a little (but I've rendered it in a pale tint of the main colour so that the main message is not obscured or upstaged). The time and date is next, and I've added a tinted panel behind it so that it's easily understood, but still secondary to the main element. All other elements are accessible to those who want them.

We can be a little more adventurous with the design, but the principle remains that it must be readable at a glance. This time I've used a vertical band through the whole poster as a bold design element and created a quick background to add texture. I'm using a more informal font, but making sure that "Car Boot Sale" is the first thing that's seen. The subsidiary elements can be read clearly once one's attention has been grabbed.

A little thought about who your audience is, and what they need to glean from your poster makes a big difference.

St Michael's Church
Car
Boot
Sale
Saturday
10th November
10am-1pm
St Michael's Church hall car park, 35 High Street
Cars £5.00 • Further details from Mr Anderson 0123 456789
Admission free
In aid of St Michael's Roof Fund

St Michaels Parish Church
car
boot
sale
Saturday 10th November 10am-1pm
The Church Halls,
32 High Street
ADMISSION FREE
cars £5.00
Contact Mr Johnstone 0123 456786
Proceeds to the Church Roof Fund

Nigel Gatherer
graphics@acornuser.com

Showing the best

After it was decided that the two day event would be withdrawn it was SASAUG and Fillin Ltd that stepped into the breach to ensure there was a big southern show. Though, with the "last minute" situation, it has unfortunately turned out that this show and the ARM Club show are both in November. Excellent news, and you'll see why...

Anyway there really is an awful lot going on at this event, so much so that one may suspect that the smaller space is just not going to be enough to accommodate the crowds that will be there but don't let that stop you. This is one time you will really want to be part of the throng.

Why?

We can't tell you. As this issue is being written we are actually nearly two months away from the show itself. The timing of magazine production means that the next issue will be off to the printers before the show starts and not back until afterwards. Though if we are very lucky we will be able to get it to that show.

What is it we can't tell you? Why it is that you really must go to this show. We have hinted, we have probably said more than we ought to but the fact remains that this event will (probably) be the most significant in recent times.

But what can we talk about? There is the Simtec USB card and all its peripherals that will be available for you to take away with you. That's why we have been concentrating on USB so much for the past few months, we've seen the launch, now we are seeing the release.

Riscstation are hoping to make a lot of people very happy, Microdigital aren't attending but that is not unusual. Their dealers will be.

Every single one of these exhibitors is someone who is dedicated to the RISC OS market and is keen to see it succeed. If you are also one of those people too then you owe it yourself, and to them, to get yourself along to this event.

We wouldn't miss it for the world. And why do we think it's great that there are two shows in one month? Just because it means that those of you who aren't able to make it for the first one will find out what it is all about and will be able to ensure you get to the Midlands show. Or come to both, you may need to.

See you there.

The Exhibitors

Association of Acorn User Groups
Spellings Computer Services (Stand F4)
Website: www.aaug.net
www.spellings.net
E-mail: neil@aaug.net
Address: 45 Hill View Close, PURLEY, Surrey CR8 1AU

Acorn Publisher (Stand B3)
Web: www.acornpublisher.co.uk
E-mail: sales@acornpublisher.co.uk
Tel: +44 (0) 161 969 9820
Address: 30 Finny Bank Road, Sale, Cheshire M33 6LR

APDL (Stand E1-E2)
Web: www.apdl.co.uk
E-mail: info@apdl.co.uk
Tel: +44 (0) 208 778 2659
Address: 39 Knighton Park Road, Sydenham, London SE26 5RN

Archive Publications (Stand A1)
Web: www.archivemag.co.uk
E-mail: paul@livetech.co.uk
Tel: +44 (0) 1603 722 544
Address: Nutwood, Middle Road, Great Plumstead, NORWICH NR13 5EG

ARM Club (Stand B2)
Web: www.armclub.org.uk
E-mail: info@armclub.org
Tel: +44 (0) 7010 709 849
Address: Merton Court, 38 Knoll Road, SIDCUP, Kent DA14 4QU

Acorn User/ Tau Press (Stand F5/F6)
Web: www.acornuser.com
E-mail: enquiries@acornuser.com
Tel: +44 (0) 161 429 8902
Fax: +44 (0) 161 429 0685
Address: 28a Middle Hillgate, Stockport SK1 3AY

Castle Technology Ltd (Stand E1-E2)
Web: www.castle.uk.co
E-mail: sales@castle.uk.co
Tel: +44 (0) 1728 723200
Fax: +44 (0) 1728 727427
Address: Ore Trading Estate, Woodbridge Road, Framlington, Suffolk IP13 9LL

Cerilica Ltd (Stand E4-E5)
Web: www.cerilica.com
E-mail: cerilica@cerilica.com
Tel: +44 (0) 870 2411 731
Address: P.O. Box 40, ROSS-ON-WYE, Herefordshire HR9 7WH

CJE Micros / 4th Dimension
(Stand D4-D5)
Web: www.cjemicros.co.uk
E-mail: sales@cjemicros.co.uk
Tel: +44 (0) 1903 523 222
Fax: +44 (0) 1903 523 679
Address: 78 Brighton Road, WORTHING, West Sussex BN11 2EN

Electronic Font Foundry (Stand D3)
Web: www.eff.co.uk
E-mail: fonts@eff.co.uk
Tel: +44 (0) 1344 875 201
Fax: +44 (0) 1344 875 202
Address: 11 Silwood Road, ASCOT, Berkshire SL5 0PY

Fortran Friends (Stand A5+)
Web: www.argonet.co.uk/users/fortran
E-mail: fortran@argonet.co.uk
Tel: +44 (0) 1235 834 357
Address: P.O. Box64, DIDCOT, Oxon OX11 OTH

Icon Technology (Stand B1)
Web: www.icontechnology.net
E-mail: mike@icontechnology.net
Tel: +44 (0) 1778 590 563
Fax: +44 (0) 1778 590 563
Address: Church House, Church Street, Carlby, STAMFORD PE9 4NB

ITC-UK Ltd (Stand C1-C2)
Web: www.itc-uk.co.uk
E-mail: sales@itc-uk.co.uk
itc-support@ntlworld.com
Tel: +44 (0) 1480 382457
Fax: +44 (0) 1480 382457
Address: 3 Ribble Close, St. Ives, Cambridgeshire PE17 6HU

MW Software (Stand F3)
Web: www.mw-software.com
E-mail: martin@mw-software.com
Address: Mannheimer Strasse 18, 67655 Kaiserslautern, Germany

NetBSD (Stand A3)
Web: www.netbsd.org/Ports/arm32
E-mail: port-arm32@netbsd.org

Photodesk Ltd (Stand B4)
Web: www.photodesk.ltd.uk
E-mail: sales@photodesk.ltd.uk
Tel: +44 (0) 1305 822 753
Fax: +44 (0) 1305 860 483
Address: 1 The Courtyard, Southwell Business Park, PORTLAND DT5 2NQ

Peter Naulls & Paul Vigay (Stand A2)
Web: www.vigay.com
www.chocky.org/unix/
E-mail: peter@chocky.org
paul@vigay.com

R-Comp Interactive (Stand B5-B6)
Web: www.rcomp.co.uk
E-mail: rcomp@rcomp.co.uk
Tel: +44 (0) 1925 755 043
Fax: +44 (0) 1925 757 377
Address: 22 Robert Moffat, High Legh, KNUTSFORD WA16 6PS

RiscStation (Stand F1-F2)
Web: www.riscstation.co.uk
E-mail: sales@riscstation.co.uk
Tel: +44 (0) 1942 797 766
Fax: +44 (0) 1942 797 711
Address: 168 Elliot Street, TYLDESLEY M29 8DS

Serious Statistical Software (Stand A4)
Web: www.serious-stats.co.uk
E-mail: sss@argonet.co.uk
Tel: +44 (0) 121 445 6887
Address: 19 Station Road, Blackwell, BROMSGROVE B60 1QB

Surftec (Stand D1-D2)
Web: www.surftec.com
E-mail: neil@surftec.com
Tel: +44 (0) 1428 608 121
Mob: +44 (0) 7940 799 833
Fax: +44 (0) 1428 608 123
Address: Burma Cottage, Glen Road, Beacon Hill, HINDHEAD, Surrey GU16 6QE

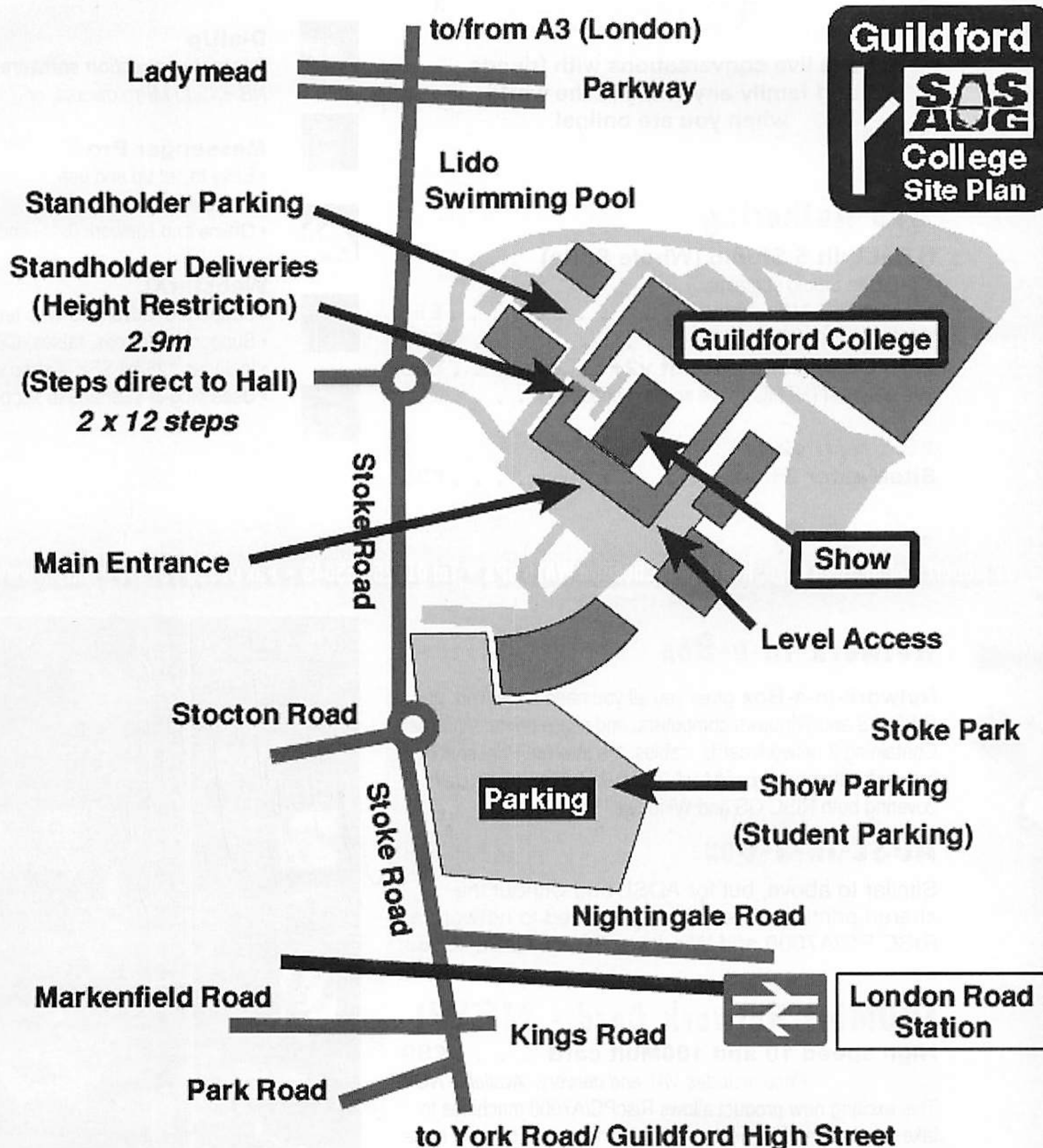
Virtual Acorn /3QD (Stand C3)
Web: www.virtualacorn.co.uk
E-mail: info@virtualacorn.co.uk
Tel: +44 (0) 1344 452868
Address: 86 Turnberry, Home Farm, Bracknell, Berkshire RG12 8ZH

Tickets

To avoid unnecessary complications the organisers have not arranged for any advance tickets, instead tickets will be low price and available on the door. Just turn up and you won't be disappointed.

Travel

Being in the heart of Guildford travel by train or by car is very well served. The organisers' Web site has very detailed descriptions of how to get there which we won't repeat here, but we have included a map for parking, so do make sure you take this issue of the magazine with you.





All products are compatible with StrongARM and RISC OS 4
Some products are enhanced for RISC OS 4
All prices include VAT and UK carriage (where applicable)

HERE IS THE NEWS...

22 Robert Moffat, High Legh, Knutsford, Cheshire WA16 6PS • Tel 01925 755043 • Fax 01925 757377 • http://www.rcomp.co.uk/

R-Comp

rcomp@rcomp.co.uk

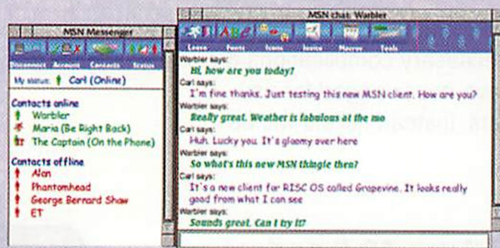
Please note - R-Comp prices now include VAT

Grapevine



The definitive Internet chat software to communicate via MSN and IRC!

£25



Have live conversations with friends and family anywhere in the world when you are online!

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HTMLEdit 5 Studio (Whole Suite) . . . £115
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Also Available:
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First class software to get you online!
Consists of DialUp, Messenger Pro 2 & WebsterXL (described below). Available with a 56k Modem and Account for £115.





DialUp £23
Internet connection software
NB. £18 to MPro owners, or £12 if you own WXL



Messenger Pro 2 £37
- Easy to set up and use,
- Flexible view options
- Offline and Network (£45) and Server (£100)



WebsterXL £30
- Support for advanced Web technologies
- Support for frames, tables, CSS and JavaScript
- Includes 128-bit SSL —shop with confidence!
- Uses plug-in interface to support Java, Flash etc.



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Interactive R-Comp

rci@rcomp.co.uk

Network-in-a-Box — New Product!

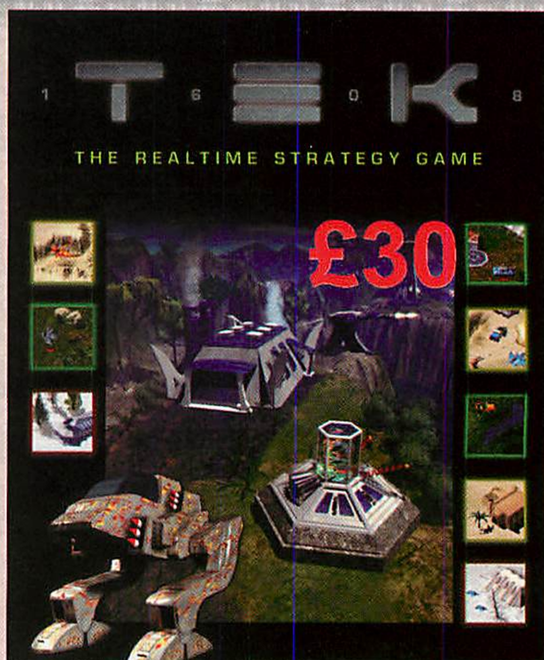
Network-in-a-Box gives you all you need to network up RISC OS and Windows computers, and share printers/internet. Containing 2 network cards, cables, the Internet/Print sharing box, software and ***5 printed, step-by-step manuals*** covering both RISC OS and Windows. **£289**

ADSL-in-a-Box — New Product!

Similar to above, but for ADSL and without the shared printing. Everything you need to network a RISC PC/A7000 and Windows PC for ADSL **£265**

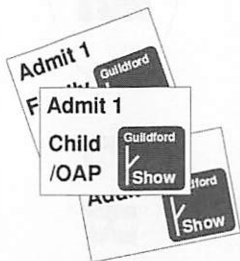
100Mbit Network Card - NEW!

High speed 10 and 100Mbit card £89
Price includes VAT and delivery. Available NOW.
This exciting new product allows RiscPC/A7000 machines to take advantage of higher speed networking, and co-exist more easily with other machines on high speed networks. What's more, the new cards are more cost effective too!

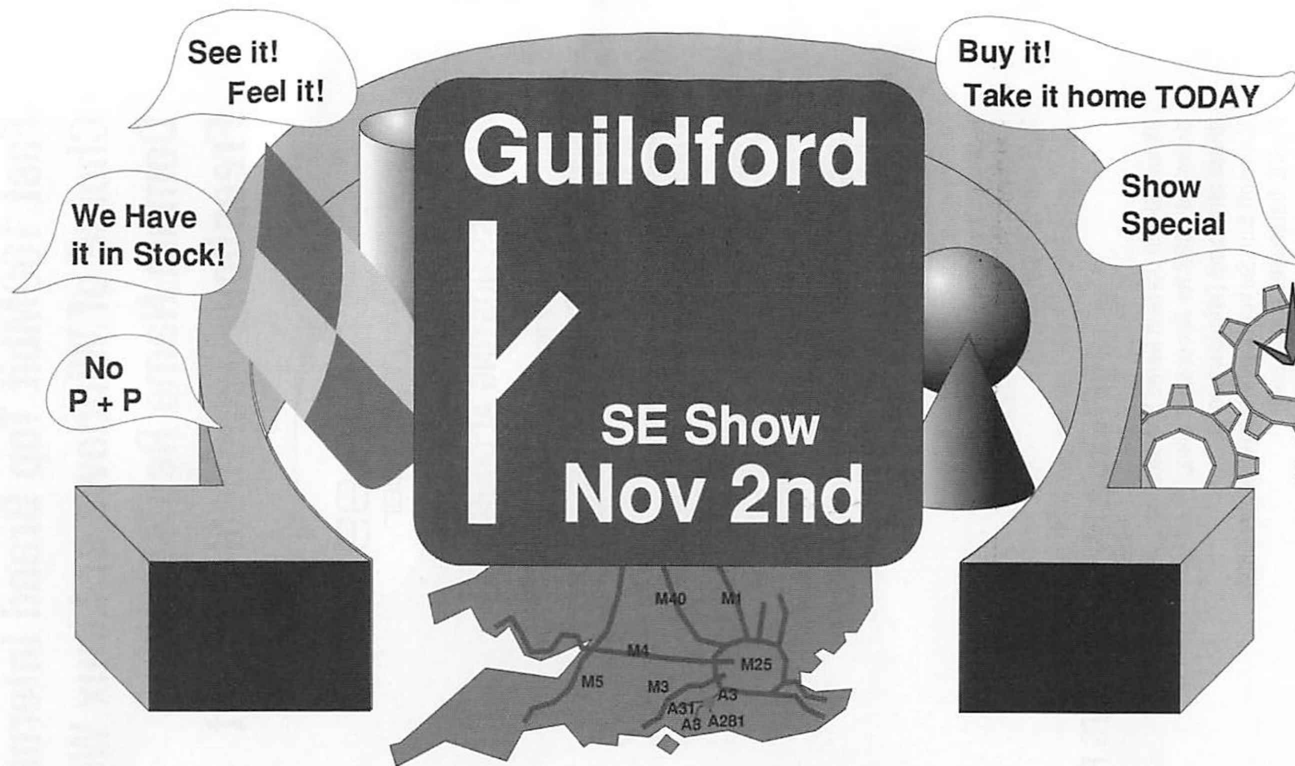


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Tickets On the Door



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Mark your Calendar Now

The Risc OS South East Show - Saturday November 2nd 2002

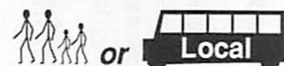
Easy Access by Road

Guildford from M4 J10 | Guildford from M25 J10 | Guildford from M3 J4 | Guildford from A3 East | Guildford from A31 | Guildford from A25 | Guildford from A3 West | Guildford from A281

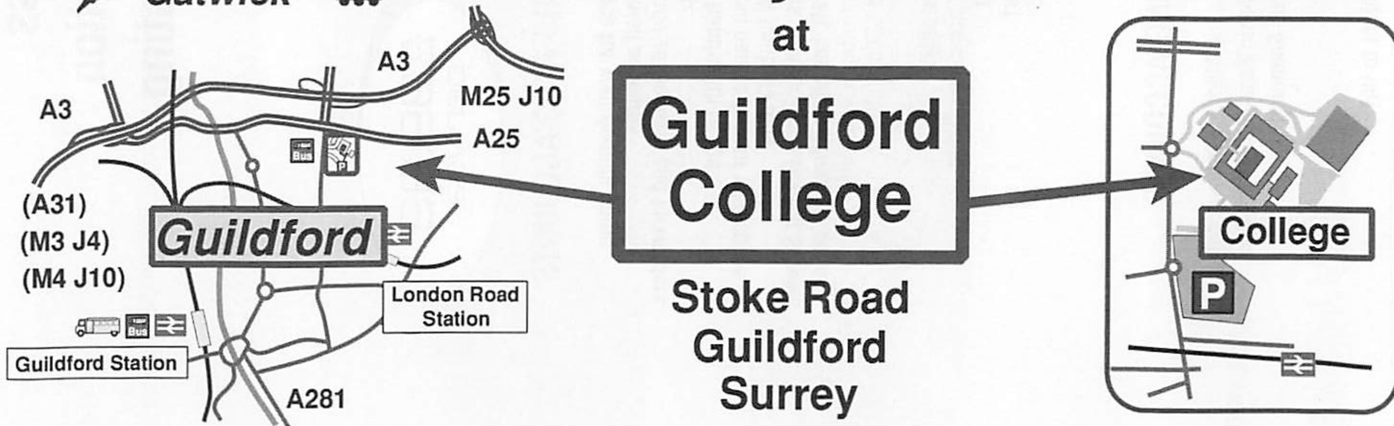


Heathrow Gatwick

The Way Ahead!

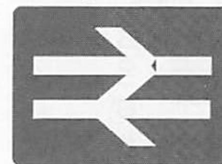


at



Guildford College
Stoke Road
Guildford
Surrey

Easy Access by Rail



Thames South West & Virgin Trains

Guildford Station

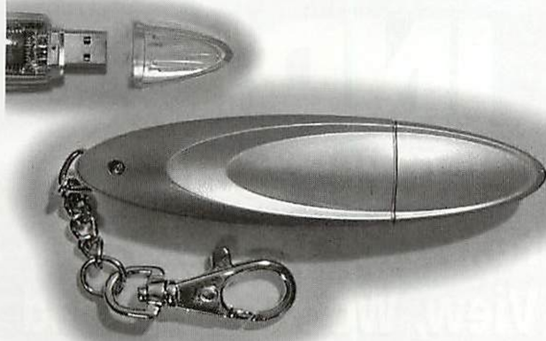
London Road Station

Details: http://www.fillin.co.uk/seshow

Easy memory

I really am not gadget freak. Honest. But when I saw this little baby, the OK Drive, I just went ga-ga. Right now I can't even plug it into half the computers I own, some have USB and some don't but I just had to have one.

This is a USB flash memory device that looks, to the computer, like a hard drive and looks to you and me like some snazzy pen. It's a solid state hard drive that comes in a range of sizes from the simple 8Mb up to the outrageous 1Gb, although I have been told that those really have to be ordered.



The price per Gb does not compare favourably with a hard disc but then you don't tend to carry a couple of kilos of hard disc around in your inside jacket pocket. You can carry this around in your pocket and frankly you will not notice it. You just won't, it is 17.5g.

So why would you use one? An example is the company who bought 30 for their staff because they were fed up with the staff "losing" their laptops. They were ordered to leave the laptop at home and transfer data via the OK Drive. If you lose the laptop you lose all your data and a couple of grand of computer (and get an increase in your insurance premiums). Lose this and you still have the data at home, and the cost is less than a tenth.

Cosmetically they come in a variety of colours, they were originally colour-coded by capacity but that may have gone by the board now. They used to have a chain with which you could attach them to your belt but that proved impractical so now they come with a pen-style catch.

One end pulls off and reveals the USB connector, there is an extension cable provided if you need it, if your computer's USB port is located awkwardly. Probably could have done with two extension cables. You also get the PC drivers with the unit but not RISC OS ones. A generic mass storage driver will work just fine.

Lovely.

Price: from £35.99
Supplier: ECB Direct
Tel: 023 9243 1279
Fax: 023 9234 9798
E-mail: e.c.b@telco4u.net

Power at your finger tips

So there sitting in the passenger seat of the car, you have your A4 (or maybe a Riscstation portable) and the battery is flat, but you need to work. What do you do?

Pull out your trusty APC Travel Power 75, get it plugged into the cigarette lighter, hopefully it will be a while before it's decided that cigarette lighters a redundant, then plug that into the power supply of your A4, or into the portable and away you go.

Yes, the APC Travel Power 75 is a power inverter that will take 12v of DC and turn it into 230v AC with up to 75 watts of power. Which probably means that you could take a Risc PC with you and have that sitting on your knee, though a 17in CRT monitor could be a little inconvenient.

Levity aside this is a great little item which will be a boon to many a traveller. It is quite heavy but that is not a huge surprise. It comes with two types of lead, one for UK and one for continental sockets. These plug into the output socket of the unit which has its own little door to prevent accidental electrocution.

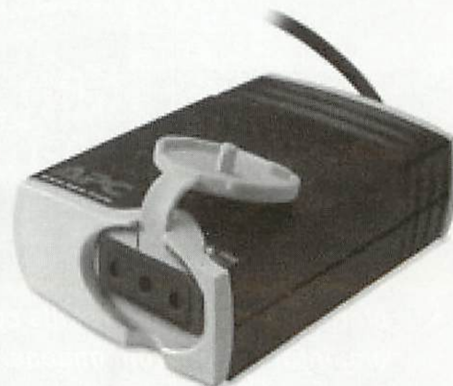
At the power input end it has a nifty unit which in the first instance is just right for plugging in to the car cigarette lighter. The end of this can be pulled off and you have a plug suitable for a plane power socket.

The new Virgin trains don't require this as they already have 240v power supplies so you can plug straight in. I must remember to take my A4 with me next time I travel.

Although we are looking at this from the viewpoint of a laptop, obviously it can be used for any mains powered unit that doesn't draw more than 75 watts. There is an indicator light to show if the input power is insufficient to drive the output. This can be used as an indicator that you have flattened the car battery.

All in all, a good buy, talk to your local mobile accessory shop and ask for the APC Travel Power 75.





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Getting the lowdown

You can have a lot plugged into the sockets of your USB interface whether it is built in or an extra card. Having so much plugged in, up to 128 devices, it is worth having a program that can take a look at what's currently plugged in and reporting on it. Just such an application can be found at the X-Ample Web site and it's free.

X-Ample are a dealer in the Netherlands who have been working in the RISC OS market for a long time, it is worth taking some time looking around their site because they have quite a few useful utilities, another of which we are covering in the New Ideas page this month.

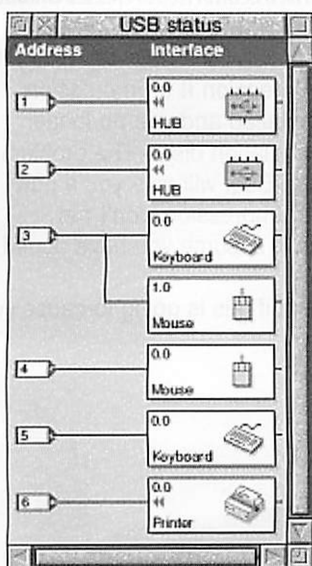


Figure I

USBInfo is a small application that scans your computer for USB devices and reports them in a very clear graphical way. Once launched the program appears on the iconbar on the far right next to the monitor icon, I really like the USBinfo icon.

I would have thought the left would have been more appropriate though I suppose it's looking at the hardware (like the Display Manager) rather than accessing it like a disc drive or scanner. Still, it felt strange to have hardware on the right.

The main window opens automatically and after scanning the current USB system produces an elegant and very clear display (Figure I). It shows the address of each connected device, but notice how a single address can have multiple devices.

The type of the device is figured out from the class description of the USB, if possible USBInfo will try to show a useful sprite of the connected devices and a suitable name. The interface number for each connection address is shown (the multiple device has a 0 and a 1). The red double-arrow means that the device supports the "full speed" data transfer

Address 1 will always be present as this is the USB Hub inside the USB card in your computer. In this set-up there is an additional hub and four further devices.

From this type of display you can move to the "Full info" display which provides far more detail on each device connected to the machine. One of the best features of USB is that this type of diagnostic program can get right down to the actual make and model of the devices connected, because this information is placed in each device and is part of the USB standard.

Figure II shows the Full info display for one device. The box at the left shows the vendor information, clicking on it reveals the names of the vendor and the product if known by the software. The small label refers to the address and leads to a further box containing the actual device.

In the middle box you have a complex set of data. Communication in USB is between endpoints via pipes, exactly how these are set up is quite technical but every device will have a connection to endpoint 0, it may have others. So there is the box with the 0 in it and the arrow showing direction of data flow to the device power. It also shows us that in this case the device uses external power.

The white box with the 8 indicates that Endpoint 0 uses a data packet size of 8 also that it has two further endpoints: one input and one output. And that there is just one "interface" for this device.

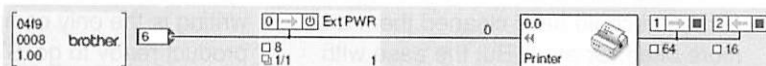


Figure II

The next box shows the that interface: The printer, followed by its two endpoints, as the printer is bi-directional it uses one for sending data to the printer (64 byte data packet) and one for receiving data from it (16 byte data packet). The solid box beside the directional arrow of the endpoint shows that this is a bulk data transfer device.

And there it is, your first RISC OS USB application a very useful program indeed. Currently this is only available in a Castle USB-compatible form however I have spoken with X-Ample and they have assured me that they will be extending the program to handle the Simtec USB interface as soon as possible. It will be interesting to see how easy that is for them.

Rumours

We know it's naughty but we just couldn't resist. Word has reached us that Microdigital will be employing the Simtec USB interface rather than the Castle one. Luckily, as mentioned in a reply to a recent letter we published, writing a USB driver is more about the detail of getting the data in and out and much less about the USB protocols.

In practical terms this means that it should be fairly easy for anyone writing a device driver to be able to do both Simtec and Castle protocols without too much extra work.

Of course this situation should never have arisen in the first place, but unfortunately it turned out that way.

Rob Donaldson
editor@acornuser.com

First off the blocks

Let me make this very clear: Everybody has to go out now and buy a USB podule right now. Why? Well I have just installed the new Simtec USB card, acquired an off-the-shelf new optical and cordless mouse, plugged it in and it works. Out of the box.

I admit I have been working with very old equipment, original mice and keyboards from a very long time ago and perhaps I could have cleaned them a bit more often. Or at all. But the ease with which I could just plug in the card, install the software and start was frighteningly easy.

To think that I could, at least potentially, start adding new hardware that works as easily (once we have the drivers) makes me very, very excited.

We knew that Simtec were developing a USB podule for existing RISC OS machines about a year ago. This went along with the inclusion of a USB port on the Riscstation machines designed by Simtec.

Then we found out, at the Wakefield Show, that Castle had one too and were handing them out to developers. Now Simtec have released theirs, although you don't buy them from Simtec you get them from suppliers who will sell you one along with the peripheral they are supporting. Or just the USB driver and the peripheral if you already have the card.

Getting it in

My card was kindly supplied by Stuart Tyrrell Developments who at the time of writing is the only company with USB product ready to go. STD is giving away an additional USB hub with every USB card sold until the end of October. This expands your options from two to four, but I'm getting ahead of myself.

The Simtec USB card arrives with minimal documentation, a single A5 sheet detailing the physical installation of the card in the various types of machine. There is a floppy disc with barely half a meg of software for installation.

So the computer was switched off for the first time in months and opened up. If you have ever installed a podule you will know it is very easy. If you have never done it then don't be scared it is a very easy thing to do and the instructions are quite clear for all.

It does require that you have a spare slot of course. Owners of A5000s and Risc PCs probably won't have a problem but if you have a one slot machine like an A7000 or A7000+ (and assuming you don't also have a CD-ROM drive) you will have to consider the options.

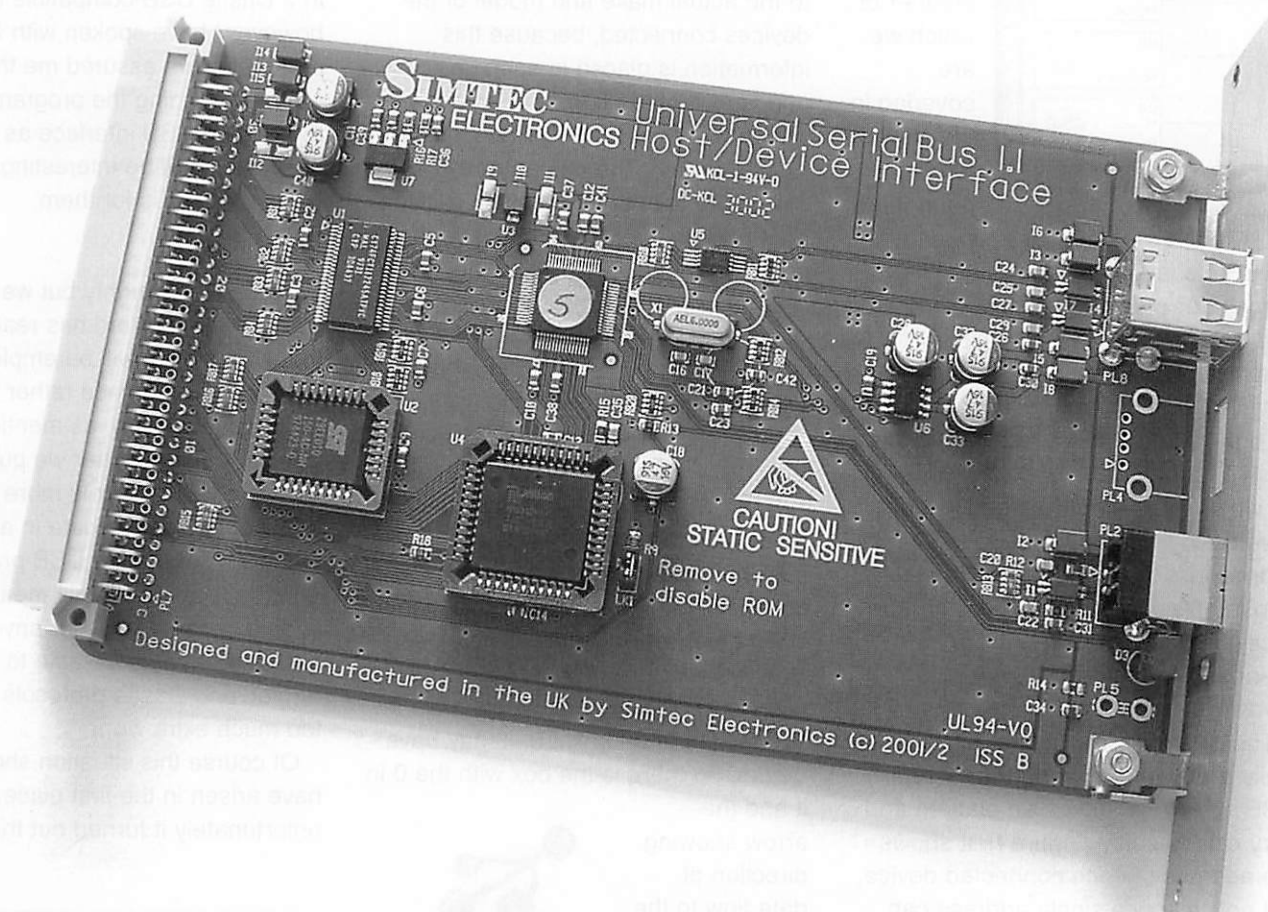
To be honest I would strongly suggest upgrading. If you want USB then I would go for a RiscStation otherwise consult your local dealer. But enough of that.

Assuming you can get the card in the next step involves !Boot. Hopefully you won't have an old !System/!Scrap set-up but the new UniBoot. If not you are going to have to get it and install it on your machine. The 2.7Mb of files are available from:

http://acorn.riscos.com/riscos/releases/UniBoot/

Installing this can be a pain especially if you have Impression II or Impression Publisher installed and you no longer have the installation discs. The problem being that UniBoot will give you a new !System and Impression won't run because it will assume you have ripped it off.

Once again if this is going to cause you



any problems talk to your local dealer and ask for their help.

If that is fine you use the !Boot merge function to incorporate the the new !Boot USB elements supplied on the floppy disc. On the floppy disc is also the application called Snafu. This is very important. It is the program that allows you to re-program the Flash ROM on Simtec Electronics cards. It works with both the Net100 card and the USB card, and will work with any other cards Simtec produces that have Flash ROM.

Snafu!

The following description should not happen to you unless you want to upgrade your card. It happened to me and I will explain why.

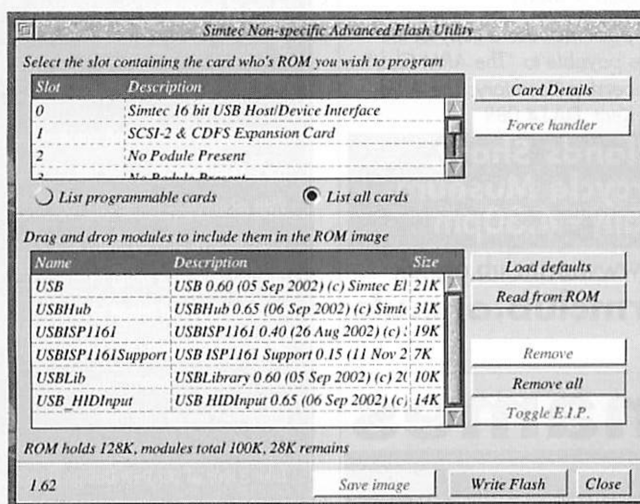
Since the new podule is currently only supplied with mouse and keyboard drivers (the HID class, Human Interface Description) obviously the thing to do was to go to the leading manufacturer of mice and keyboards, Logitech, and get some to try out.

A quick phone call had them on their way and a day later the boxes were scattered across my home office. I started with the simplest, an optical wheelmouse with a lead that plugs into the USB. It was quite eerie at first since my other mouse was still plugged in as well. But I got rid of the dirty old thing and began to play.

I was disappointed, the movement was "grainy" rather than smooth and there were problems. To get the Menu button effect on an essentially two-button mouse you click the wheel (which, apart from being a wheel, is also a button). This is fine and expected but its behaviour was weird. The menus popped up fine on some applications and not on others.

Worse still the mouse failed to work after about ten minutes and attempting to resize the windows of some applications caused the machine to corpse completely. I tested the other mice and keyboards and some of the effects were even worse. I was not a happy bunny. My enthusiasm definitely waned, the USB card did not work with the most popular mice and keyboards available. This was not good.

However a quick call to the support line revealed that the software being shipped with these very early production versions of the card, although labelled version 1.0, and while apparently they worked fine with some USB mice and keyboards did not work with all.



A new set of drivers were just being completed and if I didn't mind having a version that had not been put through the entire test suite I could have them sent through. I had them sent through.

This is where Snafu came into operation, I ran the program and, as instructed, reprogrammed the card's Flash ROM with a copy of VProtect. This was simply to wipe out all the old modules on the card. It had been suggested that since the latest files were not thoroughly tested it would be better not to program them into the Flash ROM. A new version of !Boot was supplied to merge with my existing one and this had the newer drivers included and they would load as and when they were needed.

The re-programming of the Flash ROM was frighteningly easy and very fast, the merging of !Boot took moments and that was all that was needed. To clear out the old modules I re-booted the computer. I plugged in the original USB mouse, unplugged the Acorn one and it worked.

And it was smooth, perhaps a little bit grainier than the movement of the Acorn mouse but barely noticeable. I checked the wheel-click and that now worked perfectly on all applications and resizing windows in the problematic applications was fine. It was then that I started writing this review and the mouse has continued to work for the last half hour until I got to this point.

And it is still working. Obviously the problems have been resolved. The next step is to replace the keyboard and try one of the more esoteric combinations: A wireless optical mouse with wireless keyboard...

Well the keyboard works a treat and so does the mouse. Now the most important thing to note is that I did not turn the computer off between unplugging the old keyboard and USB mouse and attaching these new ones. I just plugged them in and off they went. The only thing you do have to bear in mind with these new wireless peripherals is that you have to synchronise them by pressing a special connect button on them and their receiver.

You might think at this point that there is nothing more to say, and in an ideal world that would definitely be it. You have a USB peripheral, you plug it in to your USB card and it works.

Unfortunately that isn't the case. In talking to Vince who looks after the support and development of the card software there are problems. For a start if you think it would be a great idea to buy a really cheap USB keyboard and mouse, think again. It really isn't, there are keyboards out there that will crash a PC due to not behaving standardly per the USB protocols.

You won't get them working on a RISC OS computer either, Vince said that hopefully they have ironed things out well enough that it won't actually crash your computer. When you buy something cheap you get what you pay for.

As an example, every keyboard has a translation table that gets downloaded when the keyboard is plugged in. According to the protocols the device should report the size of the table before sending it. Very often the device will send the wrong size information.

If you are going to buy USB peripheral devices for your USB card it is essential you get it from a RISC OS dealer who can test it and ensure you have the right drivers for it. Buying from anyone else you are just asking for trouble, after all when you bring it back and ask "why won't it work on my Acorn?" can you imagine the response you'll get?

So as a final note what can drivers can you get? Currently the system is supplied with mouse, keyboard and hub drivers. Stuart Tyrrell is selling the card with a free hub (until the end of October).

The basic printer driver is functioning but you need proper printer definition files for the printer you are using. A set for HP printers should become available soon, and for free. Mass storage drivers that will allow the use of removable media are also on the way, again a version is currently working but needs finalising.

Things are definitely looking up.

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New ideas for RISC OS

My first article on new ideas for RISC OS did seem to spark the imagination of programmers and I got a letter back suggesting that there was another untouched area: Sorting.

It was pointed out that the RISC OS filer manages to sort things based on name, date, size or type but that this facility is not available to everyone. I wasn't so sure about this, it is true that the Filer sorting routines aren't available but I had at the back of my mind some SWI or other that did sorting.

And I was right: SWI &4F, OS_HeapSort. This is quite a comprehensive routine that allows you to sort any list of objects using the Heap Sort algorithm (see "Searching & Sorting" by Knuth) which is fairly rapid.

The SWI allows you to specify the type of the object you are sorting including a custom object where you supply the comparison routine. So, all in all, I think this would be the answer to the problem. Using this routine you could even sort a group of records held on a disc.

It works by having an array of integers which can be interpreted in six different ways: as an unsigned integer, as a signed integer, as a pointer to an unsigned integer; as a pointer to a signed integer; as a pointer to a case insensitive string; as a pointer to a case-sensitive string; or as a pointer to a custom object. In the final case you supply a routine that is given two values and must compare the two in whatever way is appropriate and returns either equal or greater than, or less than in its flags.

I suppose the only real improvements that could be made would be to allow a custom comparison routine to be supplied for all the object types, and to allow alternate sort algorithms to be installed.

This SWI comes in a chapter of miscellaneous OS calls which include the old OS_Byte 0 which returns or displays (FX0) the version number; OS_Bytes 1 and 241 which writes (1) or read/writes (241) the User Flag. This was an amazing concept back in the old BBC Micro days (the programmer had a bit of space of his own) but as the manual says: "system variables provide a much more versatile means".

There is also OS_Confirm which converts the pointer shape to a mouse and clicking the Select button (or Y on the keyboard) results in a Yes result, anything else is a No. There's OS_CRC which generates a cyclic redundancy check number for a block of memory, which I use in my S-Base programs and the IIC_Control SWI for working with the IIC devices, one of Mike Cook's favourite interfaces at one time.

Configuration

An article I wrote a while back in Acorn User was about how XML could be used to describe a standard choices file format. From which a standard configure program could be written and would handle the configuration of any program or application.

The reason for this is simple: Almost every application except the very simplest, has a choices file which allows you to decide how the program will run. This means that every programmer who creates an application must re-invent this particular wheel.

There are two results that stem from this: On the one hand PD programmers often don't bother. They either don't have any choices file, or they allow it to be editable by hand and just let you get on with it. The other result is that for every application that does have a configuration file and Choices dialogue box, the way it works is usually different in every case.

The difference in usage is not usually a great hardship but it is one of those minor irritations that, if removed, would make RISC OS applications that tiny bit more user-friendly.

Of course if you are not very technically minded then having the user-editable text file of options is also not very helpful, you might not be able to change the options at all or possibly change them so that the software does something you didn't intend.

A further difficulty in this area is that with an application-specific choices dialogue box the level of help you get is dependent on the programmer. Additional help explanations are often not provided simply because the programmer couldn't be bothered to spend the time supplying it.

Enter "ConfiX". This isn't a standard XML choices file, but it only lacks the XML bit. It is another very useful program supplied by X-Ample in the Netherlands and is available from their Web site (www.xat.nl).

What it does is specify a standard choices file format which can include a whole range of the usual types of controls (options, radio buttons and so on) and will create a standard choices dialogue box based on the required controls.

From there it reads the current settings, allows you to change them and saves them. It can re-set them to defaults if necessary. however it goes further. The saved files are referred to as "Profiles" it means that multiple choices files can be saved under different names. You load up the one that belongs to you or the one you want active at that time.

Very useful indeed. But it goes even further than that, while there is a certain amount of programming needed to tie ConfiX into any specific application it is nowhere near as much as is needed to write your own. It then becomes less of a chore to also include the further facility of ConfiX which is to allow comprehensive help notes to be associated with each control. Because he doesn't need to spend time programming complex systems the programmer can spend a little bit more time on the Help text ... we hope.

The best location for the !ConfiX utility is in the !Boot.Resources folder, this ensures that it will be seen before any program that uses it and ensures it is available to any application that does need it. (Figure I)

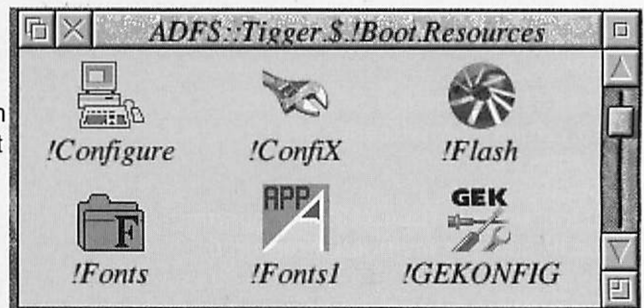


Figure I

Of course, it is a client of itself and uses its own configuration file to run its own choices (Figure II). However it manages not to recurse on itself so you can only have itself running itself just the once. Figure III shows the file structure that is needed along with the _Profiles folder.

Figure IV shows a choices file and Figure V shows the configuration description file. Unfortunately the details of API are not yet available and the ConfiX program itself is written in ABC. So we just have to live without it for the moment.

However if you would like to use it, or would like to encourage the chaps at X-Ample, drop them a line.

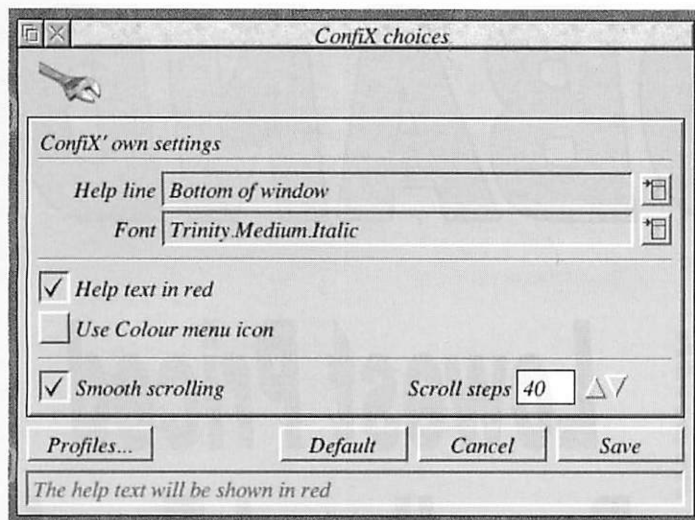


Figure II

Unified USB

Hopefully we will only have two USB protocols (Simtec and Castle) to be supported rather than three. As has been mentioned it probably won't be particularly hard to support both versions because the hard bit is the actual processing part which will be the same for both.

Luckily both camps are providing a lot of information on programming their interface so it should be relatively easy for any developer to create the drivers he needs for both.

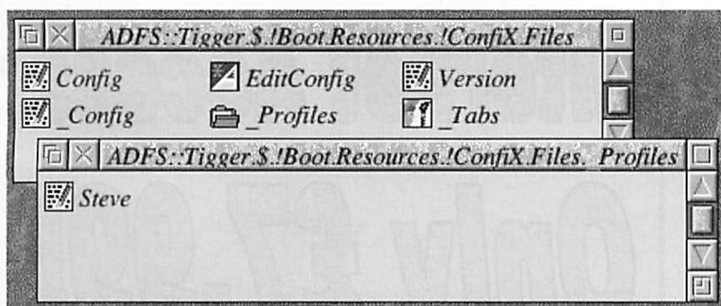


Figure III

There are a couple of results that may occur, one is that the two groups talk to each other and one agrees to change. The other is that another standard API level could be developed which provides the same set of commands. It would then detect which type of interface card is available and apply the correct conversion.

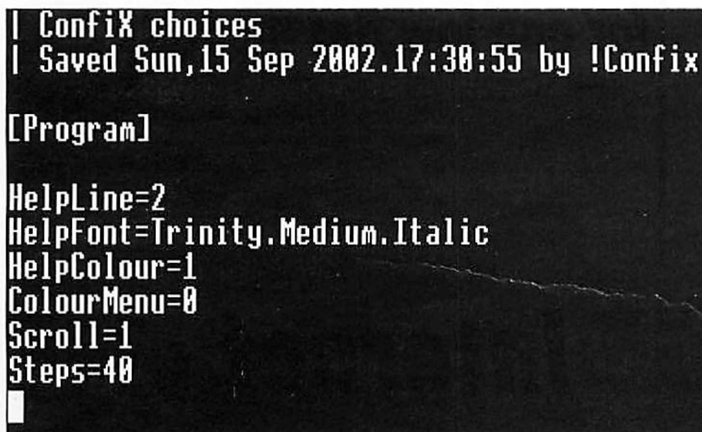


Figure IV

```
| Config

Title = ConfiX choices
ColumnWidth = 470
Width = 900
Height = 340

[Program]

Icon = program
Text = ConfiX' own settings
Width = 160

{
 Name = HelpLine
 Text = Help line
 Type = Menu
 Menu = Position;Off|,0;Above main buttons,1;Bottom of window,2;Top of window,3
 Help = Position of the Help-line in the main window
 Default = 1
}
{
 Name = HelpFont
 Text = Font
 Type = Font
 Default = Homerton.Bold
 Help = Help-text will be shown in this font
}
{
 type = ruler
 height = 20
}
```

Figure V

There is a third option, however. Let us suppose for one joyful moment that RISC OS takes off as an operating system, it is quite likely that one or other of the main players in the market will be the one to take centre stage.

The end result of this will be that, assuming other players in the PC market start to develop (don't snigger at the back there. it could happen) for RISC OS, they would find the idea of their being two USB interfaces as completely ridiculous.

```
{
 Name = HelpColour
 Text = Help text in red
 Type = Option
 Help = The help text will be shown in red
 Default = off
}
{
 Name = ColourMenu
 Text = Use Colour menu icon
 Type = Option
 Default = off
 Help = Display a menu icon to the right of a colour field
}
{
 type = ruler
 height = 20
}
{
 Name = Scroll
 Text = Smooth scrolling
 Type = Option
 Help = Scrolling instead of switching between tabs
 Default = off
};
{
 Name = Steps
 Text = Scroll steps
 Type = Integer
 Min = 10
 Max = 100
 Step = 5
 Default = 40
 Size = 3
 Width = 80
 Help = Lower is faster, higher is slower
}
```

Figure VI

Which it is. They would then choose one and only develop for that. Their choice would be based solely on the most successful of the machines available: which interface has sold the most. Once that stage is reached the other side will have to change or see their sales disappear.

I like some of what Simtec has done but I prefer to have the DeviceFS interface, purely from the elegance of implementation. Having said all that it is often the first to market that succeeds, which means that Simtec have already won.

This is a difficult one to call, I think we will just have to wait and see.

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Getting started with ADSL

Some of us can remember that first-time excitement of hearing a modem carrier tone answering our first phone call to Prestel twenty years ago. The notion that now we really can have an affordable always-on unmetered Internet connection is perhaps the final realisation of a comms Nirvana.

To achieve this blissful state RISC OS finally has to say goodbye to the serial port and audio modem, and say hello to the network card and ADSL router. Although PC users have three choices of interface to the ADSL-borne Internet, RISC OS deftly side-steps the IBM-compatible internal PCI slot and USB plug-and-pay (sic) solutions to grasp networking by the horns using Ethernet LAN (Local Area Network) connection.

Although a combined ADSL Modem and Router costs about double the price of a PCI or USB modem, using a LAN for ADSL Internet access is the only sensible option for RISC OS machines, and also makes sharing the connection between other machines much easier, whether RISC OS, Linux, Mac or PC.

However, combined with the cost of an Ethernet network interface card (or NIC) for a RISC OS machine, the total outlay for a "wires-only" ADSL installation is not trivial, but if the ADSL monthly rental of about £25 per month (inc VAT) is in budget, and remembering that call charges drop to zero, these initial costs can probably be absorbed.

All RISC OS machines using the universal "New Boot" start-up sequence already contain the networking software you need, but if not already resident it can be downloaded from **http://acorn.riscos.com/riscos/releases/UniBoot/** To obviate the potential chicken-and-egg situation, you can also download it by modem from the Acorn FTP Mirror on that dear old dial-up standby Arcade BBS (020 8654 2212).

A "wires-only" ADSL contract with an ISP states that the customer is responsible for buying, installing and correctly configuring all the equipment needed at the customer's premises. Although ISP helplines are usually sympathetic, don't mention RISC OS. Neither BT nor anyone from an ISP will send an engineer round to set it all up for you but it's not that difficult to do yourself.

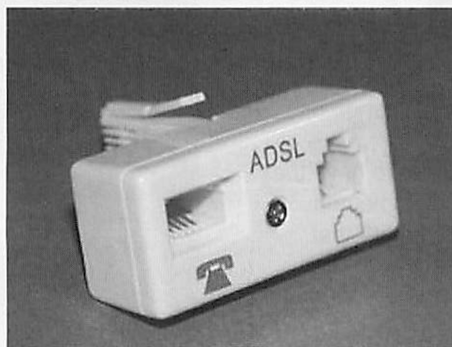
ADSL works by using the standard pair of copper wires connecting you to the telephone exchange for two independent services. Telephone call speech and signalling occupy the audio bandwidth spectrum up to about 4KHz. ADSL data transmission and reception employs digital signal processing to use the frequency spectrum from 20KHz to 1.1MHz in 256 discrete quadrature-modulated frequencies (or tones if you are a bat, hence the continued use of the term "modem").

There are a lot of DSL technologies utilising different frequency ranges and using them in different ways. ADSL is a good standard that fulfills a need for the home and small business market and therefore has been adopted.

To ensure the minimum interaction between the services, extra filters must be installed at the customer's premises to separate the speech frequencies from the data spectrum and vice versa. When your line has been enabled for "wires-only" ADSL, it's important to realise that before you install any filters, ADSL service is available at all the telephone main and extension sockets in your house.

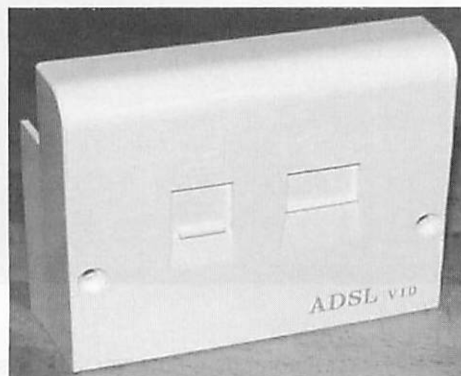
Wherever a telephone (or Digital TV box, or modem, or fax/answering machine) is plugged in, it must now go via a microfilter to stop it interfering with the ADSL signals. So you're probably going to need several microfilters, which conveniently also have a straight-through unfiltered RJ-11 connection for an ADSL modem. Most ADSL modems come with a RJ-11 telephone plug on the lead which won't fit into a phone socket, so you'll want one for the ADSL modem as well.





Microfilters, perversely, bigger is usually better!

The neatest "wires-only" installation is a plug-in replacement faceplate with built-in filter for the NTE5 master wall box. These are obtainable from Clarity (**www.clarity.it**) for £14.99, but only your ADSL modem/router can then be plugged into the ADSL outlet of the master box, as all extension sockets wired onward from the NTE5 will have ADSL filtered out. Clarity do have a way round this, see their Web site.



Clarity's neat NTE5 faceplate filter

The ADSL modem/router that we chose for Arcade BBS is the Vigor 2600, available from several suppliers including **DSLSource.co.uk** who currently charge £169+VAT and delivery. This device appropriately contains a Samsung ARM processor and a 4 port 10/100Mbps switch hub, and is very easy to set up, as long as you have Oregano (or Internet Explorer). Unfortunately Fresco doesn't like the Javascript of the V2600's Web configurator.

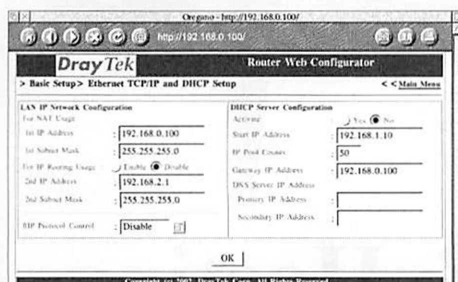


ARM inside

Fitting the NIC to a Risc PC can be tricky, I had to take Arcade completely to pieces and remove the motherboard to install our Atomwide network card. Maybe the new NET100 card goes in more easily? The !Boot configuration program is used to set up the Internet system. The V2600 defaults to the private network address of 192.168.1.1, but I prefer 192.168.0.100 so I needed to set our machine temporarily to 192.168.1.2 to be on the same subnet so I could log in to the router's setup Web server to change its IP address.

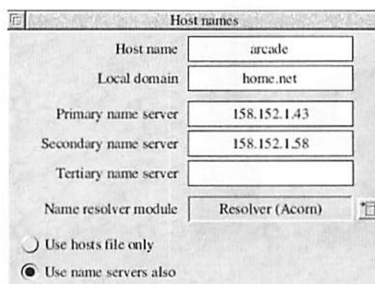
For small networks I find it much easier to set each machine's IP address manually, so the lack of DHCP (Dynamic Host Configuration Protocol) except for those with RISC OS Select, isn't really a

problem. Oregano can be used to access the V2600's Web configurator, by typing http://192.168.1.1 in the URL bar. On the Ethernet TCP/IP setup page I reset the router's own IP address to my preferred 192.168.0.100 with a netmask of 255.255.255.0 and clicked "OK".



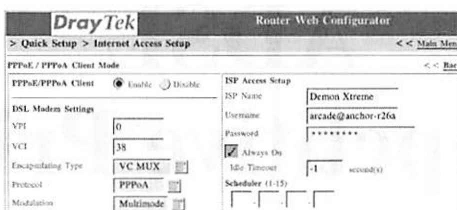
Setting the Router IP address

I reset the IP address of the Arcade machine itself to 192.168.0.27, with the router's new address as its gateway, and set up Demon Internet's nameserver addresses, and re-booted. I could have chosen any address in the 192.168.0.X range (except 100) but the number 27 has resonances with our FidoNet address from the old days.



The important network settings

I can now log back into the router with its new IP address and set up the UK ADSL parameters: VPI 0; VCI 38; VC MUX encapsulation; PPPoA protocol and our Demon username and password. The Always-On button and Idle Timeout settings ensure continuous connection



ADSL settings

with automatic re-connection should the line drop for any reason. I click OK to save the settings, and connect the modem to the phone line.

After a few seconds the flashing "ADSL line" LED goes to steady green, and we're online! It's really that easy, providing everyone else *in the chain of command* from ISP to BT and back again has done their stuff. Running public Web, FTP and Telnet servers as we do at Arcade BBS requires a little more configuration of jargony things like DMZ and Port Forwarding, but the essential setup need take no more than fifteen minutes.

And that's all there is to it, your simple but concise guide to adding ADSL to your home. Though it is important to remember that not every BT exchange is set up for ADSL yet. You can go online to bt.com to find out whether yours is.

There are many companies that offer ADSL at a variety of prices, from the well known ones like Demon down to the new suppliers with the ultra-low prices like fairADSL.com, as you can see you don't need a huge amount of support to get going.

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SDSL: The business solution

Everyone knows that the A in ADSL stands for Asynchronous. It may come as no surprise to learn that there is also an SDSL, the S is for Synchronous

Most homes and small business users are connected to an asymmetric DSL (ADSL) line. ADSL divides up the available frequencies on the assumption that most Internet users look at, or download, much more information than they send, or upload. For slightly bigger businesses or certain specialised ones this may not be the case.

There are quite a few different types of DSL standard:

• Very high bit-rate DSL (VDSL) is a fast connection but only works over a short distance.

• Synchronous or Symmetric DSL (SDSL) doesn't allow you to use the phone at the same time, but the speed of receiving and sending data is the same.

• Rate-adaptive DSL (RADSL), This is a variation of ADSL, but the modem can adjust the speed of the connection depending on the length and quality of the line. And there are factors that can prevent the use of ADSL, that is one of the reasons why exchanges are being slowly converted rather than all coming on line immediately. Perversely fibre-optic cables prevent ADSL because the usual voice circuit converters won't pass the higher frequency signals.

But let's look at SDSL, this is a technology that is good for businesses that need to send and receive at roughly similar rates. SDSL needs its own telephone line but does work with a standard copper wire pair. It sends and receives at about 2.5Mbit/sec which is quite a decent speed, faster than ISDN and considerably less expensive.

ISDN is beginning to fall out of favour nowadays simply because of the installation cost (say £300) and then you have to have the software if you are planning to directly link to other computers. The software can set you back another £900, and there is no proper standard for direct connect data transfer which means you might not be able to talk to the other end anyway.

Having a fast DSL link to the Internet means that you can upload and download big files without too much pain but there is more to it than that.

Big Ethernet

Once upon a time it was only huge corporations that required direct phone and data links between offices. For that they bought leased lines at huge amounts of money per year. A leased line is simply a telephone line that is dedicated to your service, nothing else uses it.

But times move on, smaller companies cannot afford leased lines but they do want to have direct and secure data transfer between offices. Into this breach have stepped companies which provide fast Internet data transfer via SDSL lines straight into their data backbone and out again near the other office.

This method is far superior to the leased line approach, it is cheaper for one thing and you don't have to worry about the potential exponential increase in costs as the number of offices goes up. The cost increase is linear.

The backbone itself isn't, strictly speaking the property of the supplier, usually it belongs to another company who themselves lease off bandwidth.

Having got that far some rather interesting things can happen. I recently came into contact with a company called Eros Telecom who provide what they call their Ethernet Anywhere facility.

This is the ability to give the impression that the network in one office is actually the same network as in another office which could be half the country away.

From a RISC OS viewpoint this would mean that someone in Cambridge could use ShareFS to share a part of his harddisc with someone in Manchester. If they were hooked up by the Ethernet Anywhere facility. Or print direct to a printer in another building 300 miles away but without having any special set ups. No leased lines, no ISDN line (which is slower anyway) just using SDSL and Ethernet Anywhere. If that sounds like something you could use I would get in touch.

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Part 10: Tracking media

Having examined how we organise the handling of backups in a generalised way for our MediaTrack program we will now take a look at getting the data back into the application.

For this we will start at the beginning. The iconbar menu, as described last time, has been extended to have a Utilities sub-menu currently containing the Backup and Restore options. You can examine the actions implemented by each of these by looking at the iconbar menu select handler (Figure I).

Clicking the Restore option invokes the 'backup_restore' procedure. At this point we pop-up a window which lists the various backup points, we choose one and then click Start. The backup procedures then re-load all the data and then use the ChangeLog to put in the alterations in that backup as well.

We have a switch option 'All' which, if selected, means that every ChangeLog from the starting point up to now is run through.

So let us look at this in a little more detail. Figure II shows the first group of restore operations, the ones requiring user interaction. At the outset we need to initialise the restore_all variable, this is the one used with the 'All' switch option. Next we need to find out which file we are going to restore from this is achieved through the "proc restore which" procedure, that returns the filename to use. If the null string is returned it means that nothing was selected. If a file was chosen the application then runs a check to ensure that the user really meant it and if so go ahead.

```
if _running
   case @menuselect(0)

     when IBM_INFOBOX
       local c
       card new c, "info"
       card show c
       card poll c
       card dispose c

     when IBM_UTILITIES
       case @menuselect(1)

         when IBUM_BACKUP
           proc backup_new

         when IBUM_RESTORE
           proc backup_restore

         endcase

     when IBM_QUIT
       poll exit

     endcase
 endif
```

Figure I

The restore_check procedure uses a standard set of query routines (which shouldn't be confused with S-Base queries, these queries are just user-interface questions). Figure III shows the relevant routines, there is nothing here that is new so I won't go into detail.

However the restore_which is a bit unusual. This particular format window uses a selector, but in this one we only allow a single line to be selected, for this we need a variable which is rfile_num, initialised to -1.

We have a routine 'restore_fill' which finds the file names and puts them into the selector. It starts by getting the length of the data directory pathname, then deletes any previous contents of the selector. This shouldn't really be necessary but I always do this as a matter of course.

```
def proc backup_restore
  local restore_all=FALSE
  local fn=proc restore_which
  if (fn)"") then proc restore_check(fn)
enddef

def proc restore_which
  local rfile_num = -1,ok=FALSE,fn="",sl

  card new rfile_h,"restore",CARD_CENTRE
  card set protect rfile_h,"start"

  sl=@elementhandle(rfile_h,"filelist")
  proc restore_fill(sl)

  card show rfile_h
  card poll rfile_h
  card dispose rfile_h

  if (ok) then fn=_backup_datapath+fn

  return fn
enddef

def proc restore_fill(s)
  local dl=@len(_backup_datadir)+2
  selector delete s,0,@entrycount(s)-1
  select file _backup_datadir, "*", proc restore_fillone
enddef

def proc restore_fillone(f)
  f=@mid(f,dl)
  if (@instr(f,".")=0) then selector insert s,f
  return FALSE
enddef

def proc restore_check(fn)
  case proc query_yesno("Do you really want to do a restore?")
    when QUERY_ACTION
      proc restore_action(fn)

    when QUERY_CANCEL
    when QUERY_NOACTION
    endcase
enddef
```

Figure II

Finally we use the 'select file' command again. You may recall that this lists every file and folder on a specific path that matches a given pattern. In this case we match everything. The disadvantage of this command is that it automatically recurses down into folders and lists their contents as well. If it matches a folder and recurses into it it will match everything in that folder because the folder name matches.

```
def proc query_save(question)
  return proc query(question,"save")
enddef

def proc query_delete(question)
  return proc query(question,"delete")
enddef

def proc query_yesno(question)
  return proc query(question,"yesno")
enddef

def proc query(question,x)
  local qq,result
  card new qq,"query card "+x,CARD_CENTRE
  card set header qq,@applinfo(1)+" Query"
  card show qq
  vdu 7
  card poll qq
  card hide qq
  card poll until 0,qq
  card dispose update qq
  return (result)
enddef
```

Figure III

For every file or folder it matches the command calls the specified procedure with the found name as its parameter. In our case you will get something like this:

```
Current
Current.ChangeLog
Current.media
Current.mediatype
0207311441
0207311441.ChangeLog
0207311441.media
0207311441.mediatype
```

We are not interested in the files within the folders, only the folder names themselves. So within the "restore_fillone" routine we ignore any filename that has a '.' in it, and only add names without a '.'. This gives us (in this case) just Current and 0207311441.

If we now look at the handler routine (Figure IV) for the window that displays the list. Notice that the "Start" button is initially greyed out but as soon as one of the lines is clicked the button is selected and can then be clicked. This is a scared card and clicking any other part of this S-Base application will make it vanish as will clicking the close icon or cancel button, the 'ok' variable will be set to false and the card is closed.

If "Start" is clicked it means that an item in the window must have been selected. The text is taken out of the selector using the @entrytext function, 'ok' is set to true and the card is closed.

From here, assuming everything is okay, we make that final check with the user and then move to the actual restoring code. The first part of this code is shown in Figure V,

```
case @clickelementlabel
  when "filelist"
    if (rfile_num=-1)
      card set protect @handle,"start"
    else
      card clear protect @handle,"start"
    endif

  when "start"
    fn=@entrytext(sh,rfile_num)
    ok=TRUE
    card exit poll @handle

  when "cancel","<close>","<scared>"
    fn=""
    ok=FALSE
    card exit poll @handle

  endcase
```

Figure IV

there are two actions to undertake, the first of these is to import each of the backed up files using the 'import csv' command.

If you recall each of our backup files consist of the file's field names followed by each record, all in CSV format. The S-Base import command, like most of its commands, is very flexible and in the form we are using it looks like this:

```
import csv [file handle], [file name], [bit handle]
```

The file handle and file name are obvious but the bit handle needs further explanation. As previously described S-Base has a variable type, the bit string: A string of bits, each of which can be set or unset.

The way it is used here is that the bit string is as long as there are fields in the file being imported, a line of CSV data is taken from the file and for every bit that is set each item of data is inserted into the file buffer.

For example, if the file buffer has fields title, forename, surname, age and postcode; the line of data contains "Jim, Spraggs, JE1 1EY" and the bit string contains "01101".

```
def proc restore_action(fn)
  proc restore_from_archives(fn)
  proc restore_from_changes(fn)
enddef

def proc restore_from_archives(fn)
  local z,x,rn,r,f,b
  delay on
  fn+="."
  bit new b
  ffor x=0 to backup_curitem
    rn=@trim(backup_items[x].name)

    f=@openin(fn+rn)
    @exec("import csv def f, "+rn+", b")
    r=1

    while (!@eof(f))
      delay @ptr(f)*100/@ext(f)
      @exec("import csv f, "+rn+", b")
      @exec("save "+rn+", r")
      r+=1
      endwhile
    close f
    @exec("reindex "+rn)

    next
  bit dispose b
  delay off
enddef
```

Figure V

Then the first data item (Jim) is put into forename, the second in surname and the third in postcode. Title and age are skipped.

So the next question is: how is the bit string set up? There is another version of the 'import csv' file:

`import csv def [file handle], [file name], [bit handle]`

This command reads the first line of data from the CSV file and compares it to the field names of the specified file and sets the bits in the bit handles accordingly.

In the short term this may be an unnecessary complication, however at some point in the future we could do a backup of the data and then import it into a new version of the application. The new version may have additional fields mixed in with the original fields, this will ensure that the original data still gets loaded into the right fields.

After the 'import csv' command is a 'save' command (and later the 'reindex' command) which also needs explanation. First let's review the file commands:

Creating a new record uses the "create [file name]" command. This takes the file buffer contents and puts them into the next free space in the database file.

Updating a record "update [file name], [record number]" takes the current file buffer contents and puts it into the specified record position in the database file. However what it also does is update all the relevant indexes.

If you imagine you are importing a thousand records and having to re-index after every single record has been imported you can see that this is going to take a long time. What we also have is:

Save a record "save [file name], [record number]" takes the current file buffer contents and puts it into the specified record position in the database file without updating any indexes.

So we use this command for speed and when all the data has been imported we issue the reindex command to ensure all the indexes are up to date.

Once all the data has been imported it is time to include all the changes in that backup, this is done in the restore_from_changes procedure. This routine does one of two things, if the 'All' button was not clicked it updates only the ChangeLog for the currently selected backup.

If 'All' was selected then every ChangeLog from the one selected onwards is used. this is done by using the "select file" command once again, naturally it chooses every available file so what we do is set a flag that prevents any changes being done until we reach the originally selected backup, every ChangeLog from then on is used.

```
def proc restore_from_changes(fn)
  local here=FALSE,path="",leaf="",dl=@len(_backup_datadir)+2
  proc split_filename(fn,path,leaf)
  if (restore_all)
      select file _backup_datadir, "*", proc restore_changes
    else
      proc restore_changes(fn)
    endif
enddef

def proc restore_changes(f)
  f=@mid(f,dl)
  if (@instr(f,".")=0)
      if (here)
          proc restore_this_change(path+f+".")
        else
          if (f=leaf)
              proc restore_this_change(path+f+".")
              here=TRUE
            endif
        endif
    endif
  return FALSE
enddef

def proc restore_this_change(fn)
  local b,q,f=@openin(fn+_backup_clogname),op,rn=@spc(50),id
  bit new b

  delay on
  q=@ext(f)/100

  while (!@eof(f))
    delay @ptr(f)/q

    import csv f, op,rn,id
    rn=@trim(rn)
    bit clear b
    bit set b,1,@fieldcount(rn)
    case op
      when BACKUP_CREATE
        @exec("import csv f, "+rn+", b")
        @exec("create "+rn)
```

Figure VIa

```
      when BACKUP_UPDATE
        @exec("import csv f, "+rn+", b")
        local rr=@find(rn,"by id",id)
        if (rr>0) then @exec("update "+rn+", rr")

      when BACKUP_DELETE
        local rr=@find(rn,"by id",id)
        if (rr>0) then @exec("delete "+rn+", rr")

      endcase
    endwhile

  delay off

  bit dispose b
  close f
enddef
```

Figure VIb

Recalling what we did in the backup procedures, every change is either a Create, Update or Delete. For all three we record the type of action, the file being altered and the unique ID number of the record. For the first two we also store the complete record contents so that we can create or update the earlier record.

The procedure is simple: We read a line, this should be the info line that gives the operation type, file name and unique ID. Then we split between three options using the operation type.

For create we load the data, and create the record. For update we load the data, using the unique ID we find the current location of the record and update the data. If the record is not found I have arbitrarily decided that the best course of action is to simply create the record.

Finally, for delete, there is no additional data to load and we locate the record then delete it. If the record can't be found we just continue with no other action. And that is all there is to it.

3: Field list: M

Label	Offset	Data type
handle	0	i4
name	4	string16
label	20	string32
open	52	boolean
qhandle	53	i4
mhandle	57	i4
mqhandle	61	i4

Figure VII

Unless you have spotted the fudge. The 'import csv' command requires a bit string, which we have used but have improperly initialised, we just set all the bits without checking for field compatibility. The proper way to do this would be to alter the backup routine to export the field names every time we did an action and then import the headers and set the bit string every time as well.

The fact that I haven't done this is making my programming head feel a little distracted so I would guess that the version you find on the Web site will, in fact, have that correction in it.

Of record menus and PCs

The general PC experience is not one that I enjoy very much, but sometimes you can learn from adversity. There is one application on the PC, quite a complex one, which it has to be said has an extremely good design and makes the PC experience a little less unpleasant.

This is a program that uses databases extensively and it has a feature which I feel is excellent. Where one record type has to be linked to another record type you can pop-up a menu and the menu has, as its first item, the ability to create a new record of the type being linked to. This means that if you are editing one record and suddenly find you have to link to a type that does not currently exist you can create it from the menu and link to the one you have just created. Which is a nice touch.

```
def proc control_register_zone(zs,zt)
  local zh=0,zn="",qh=0,mh=0
  ctrl_curzone+=1
  card new zh,@tolower(zs+" zone")
  card set header zh,@trim proc toupperfirst(zt)

  zn=@trim @tolower(zs)
  ctrl_zones[ctrl_curzone].handle  = zh
  ctrl_zones[ctrl_curzone].name    = zn
  ctrl_zones[ctrl_curzone].label   = @trim proc toupperfirst(zt)
  ctrl_zones[ctrl_curzone].open    = FALSE

  query new qh,(zn+" list")
  ctrl_zones[ctrl_curzone].qhandle = qh

  menu new mh,zn,ctrl_zones[ctrl_curzone].label
  ctrl_zones[ctrl_curzone].mhandle = mh

  query new mqh,(zn+" menu")
  ctrl_zones[ctrl_curzone].mqhandle = mqh

  @exec("proc "+@trim ctrl_zones[ctrl_curzone].name+"_zoneprep(zh,qh,mh,mqh)")

  return ctrl_curzone
enddef
```

Figure VIII

And that is what I wanted to be able to do here as well, it did take a bit of work to

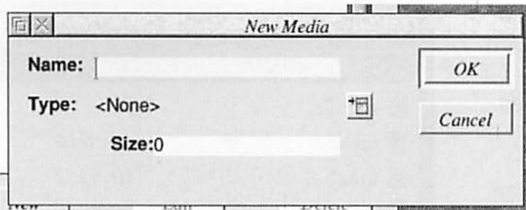


Figure IX

implement but it is not that hard. Creating a menu from which an item can be selected is very similar in some ways to the use of the selector in the main zone window.

For each type of record we have to have a global handle to use for the menu, and we have to have a global query that we use to store the records associated with the menu so we know the record number of the selected menu item.

As before we simply extend the zonal data structure (Figure VII) again to include the two new fields: mhandle and mqhandle. These are initialised in the control_register_zone procedure by creating a menu without any content and also a new "menu" query for most zones this will be identical to the list query but does, at least, allow the option to be different. (Figure VIII)

In case there is any post-registration customisation to be done we also modify the

```
local znn=@trim(ctrl_zones[curzone].name)

case @clickelementlabel
  when "okay"
    ok=TRUE
    card exit poll @handle

  when "cancel","<close>","<scared>"
    ok=FALSE
    card exit poll @handle

  otherwise
    @exec("proc "+znn+"_cardclick(@handle,@clickelementlabel)")

  endcase
```

Figure X

_zoneprep call to include these two handles as well. In this case neither 'media' or 'mediatype' do any further customisation.

Making menus

So let's take a look at how this menu system is implemented. On the 'media' record card (Figure IX) we have a field named 'type', this is the link between 'media' and 'mediatype', this field cannot be directly edited. We also have a pop-up menu button, the idea being that we pop-up a menu of possible 'mediatypes' and select one, this is then entered into the field.

So the first thing we need is an extension to the click handler for this window that will create and pop-up the menu. Figure X shows the standard handler which calls a routine _cardclick if the element clicked isn't one it knows about.

In the procedure 'media_cardclick' (Figure XI) we check for the element being clicked and if it is 'menu mediatype' (the pop-up icon) we call a standard routine to generate the menu. The parameters for this routine tell it the handle of the window that was active in the call, and zone numbers of the type we want a menu for and the calling zone.

Figure XII shows the menu generation code. The first step is to extract the type information into variables that are easier to use and accessed faster. We then get rid of the old menu and create a new one because there is no "menu clear" command.

Then we run the query and build the

```
def proc media_cardclick(zh,ze)
  case (ze)
    when "menu mediatype"
      local zn=proc control_find_zonename(@mid(ze,6))
      proc control_menu_maker(zh,zn,media_zonenum)
    endcase
enddef

def proc media_cardmenuselect(zh,zn)
  local zr=0,ms=@menuselect(0)
  case (ms)
    when 0
      local ok=FALSE
      proc mediatype_new(zr,ok)
      if (ok)
          media.mediatype_id = proc mediatype_getid(zr)
          card update zh,"type"
          proc media_makebtns(zh)
        endif
    otherwise
      zr=proc control_getzone_mqentry(zn,ms)
      media.mediatype_id = proc mediatype_getid(zr)
      card update zh,"type"
      proc media_makebtns(zh)
    endcase
enddef
```

Figure XI

menu, we use the delay command just in case there are a lot of menu items. The only other complication here is that we need to insert the first "Add new mediatype" option. This needs to be there on its own if there are no menu items, and be there with a dotted line beneath if there are.

We also use a new function @filefield, this allows us to access a field in a file buffer when the name of the file is held in a variable.

As we know RISC OS is a multitasking system because of this there can only be one menu active in the entirety of RISC OS at any one time and while it is active there can still be other things happening, both in the S-Base application and also in other programs in the system.

This means that we have to set up some

```
def proc control_menu_maker(zh,zn,zc)
  local mqh=ctrl_zones[zn].mqhandle
  local mh=ctrl_zones[zn].mhandle
  local zname=@trim(ctrl_zones[zn].name)
  local zlabel=@trim(ctrl_zones[zn].label)
  local i="<Add new "+zlabel+">",qq=0

  menu dispose mh
  menu new mh,zname,zlabel
  ctrl_zones[zn].mhandle=mh

  delay on
  query clear mqh
  query run mqh

  if (@ext(mqh)=0) then menu insert mh,i
  ffor qq=0 to @ext(mqh)-1
    load zname,@bget(mqh,qq)
    if qq=0 then menu insert mh,i+"|"
    menu insert mh,@trim(@filefield(zname,"name"))
    next
  delay off

  ctrl_cmenuzh = zh
  ctrl_cmenuzn = zn
  ctrl_cmenuzc = zc
  menu set mh
enddef
```

Figure XII

global variables that will hold information about our menu while it is on screen but not clicked. These are the three at the end of the procedure. They hold copies of the three parameters to the application. The final command makes the menu appear.

Menu selection

Now S-Base also keeps track of which card is active when a menu is created so when a menu item is selected it knows which menu select handler to call. In this case it is our 'edit menu select' in Figure XIII, which uses the three global variables to call the correct routine for the handling. In our case media_cardmenuselect in Figure XI.

This sorts out the two situations, did the user select an actual menu item or did he choose to create a new record of the required type? In the second instance we pop-up the record window using the mediatype_new command and, if the record is successfully created, insert its unique ID into the the media record, update the type field and then check which field (duration or size) should be displayed now.

In the genuine selection option we use another standard procedure to find out the record number of the selected item then set up the fields as before and display them.

Unfortunately this wasn't quite as simple as it sounds. The complication lay in my clever appearing and disappearing zone windows. As originally programmed any attempt to pop-up the edit window of a zone that wasn't currently displayed failed, the window was created and the editing would theoretically occur but as the zone was not visible the window was not displayed.

```
local zname=@trim(ctrl_zones[ctrl_cmenuzc].name)
@exec("proc "+zname+"_cardmenuselect(ctrl_cmenuzh,ctrl_cmenuzn)")
```

Figure XIII

It required a generic change to the _make procedures to ensure these windows will pop-up anyway even if the zone they belong to is currently hidden. It is a kludge but a safe one. The edit record card comes from a menu click this makes it disappear if anything else is clicked in the meanwhile, so no anomalies are generated.

So there it is we can now link records together using generic routines and we can restore data so carefully backed up if there is a problem.

In the next instalment we will look at the card validation error window, which is not too tricky; and the general delete code which includes how interested zones can prevent deletion from happening. And we will add a new zone or two which will make the whole application suddenly valuable and useful. After that we will take a look at the S-Base printing capabilities which are very versatile.

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(SEE PAGE 52 FOR DETAILS)

Painting by numbers

Softease (01335 343421) plan to help pupils learn about symmetry, colour, brightness and contrast with the all-new **Textease Paint**. Aimed at Key Stages 1 to 4, it promises the tools and applications necessary for a comprehensive paint program. So you can build pictures and develop complex images using repeating patterns.


R.E.M

The tools are all you'd expect: pencil, brush, spray, flood-fill, eraser, shapes and stamps - make your own or choose a library. As well as graduated fills and unlimited undo/redo, plus a clone brush so you can copy one area of a picture to another.

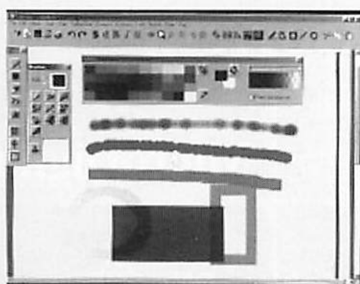
As well as painting tools there are digital enhancement features which let you blur, brighten, darken, wash, emboss or remove the dreaded red-eye from photographs. There's even a region tool which you can use to draw around an object on the page enabling adjustment of the contrast or brightness of the image.

Textease's layers mean that you can maintain shapes and text as editable objects above the painting layer, enabling them to be moved, re-sized, coloured or edited with ease. This particular function is very useful for picture composition and for creating copies of Web site buttons with differing text. Fully integrating with the other Textease products it costs £39. For more details log on to **www.softease.com**

Standardising standards

With the current emphasis being well and truly on A levels, you might have missed the fact that a third of 14-year-olds still cannot reach the required standard for their age in English, Maths and Science, according to figures published by the Department for Education and Skills.

Results of Key Stage 3 national tests taken this spring show a 1 per cent year-on-year improvement, and the improvement over four years is not much better. Overall the proportions of children reaching required Level 5 or above in the tests were 66 per cent in English and science and 67 per cent in Maths.


Text Ease Paint

David Hopkins, head of the Standards and Effectiveness Unit at the Department for Education and Skills, said there was a direct link between poor performance at Key Stage 3 and low achievement two years later at GCSE. He revealed that of those who had failed to get level 5 or above only 6 per cent subsequently notched up five or more good GCSEs.

Consequently the government has started a £500 million drive to support teaching of the 11-14 age group at secondary school. However, pundits are dubious whether it is likely to meet its targets of 75 per cent achieving Level 5 by 2004 in English, Maths, and Information and Communications Technology, and 70 per cent in science. By 2007, 85 per cent should achieve Level 5 in English, maths and ICT, and 80 per cent in science.

We shall see.

Products at your fingertips

Covering all areas of the primary curriculum R-E-M has unveiled its new catalogue for Early Years to Key Stage 2. As well as containing an up-to-date collection of titles for 2 to 11-year olds, this new catalogue contains advice and guidance for teachers on the Government's new e-learning credit initiative.



The curriculum is divided into subject areas: English, Mathematics, ICT, History, Geography, Science and Music. All titles are classified by National Curriculum and Scottish guidelines, Key Stage, age, suitability, publisher, description and so on. In particular, look out for their Citizenship titles.

Alongside is R-E-M's Web site (www.r-e-m.co.uk) also features a fully searchable database of all their titles. You can get your copy of the catalogue by ringing 01458 254700.

No competitive edge

With Microsoft smug in its ascendency the pockets of Apple and Acorn resistance received a small sop recently. This comes in the form of Microsoft's move towards annually renewable licences for software with which they plan to replace the one-off licence fee. A nuisance on the nightmare scale for small Primary Schools who will be doubly hit as schools do not qualify for the discounted campus licences offered to colleges and universities.

Labour MP for Waveney, Bob Blizard, raised the matter in the Commons when he discovered that one college with 500 computers pays £6,900 a year while a school with 152 machines pays £6,300 and another with 273 computers pays a massive £11,000. Will anyone take advantage of this blunder or will Microsoft spin their way out of it?

Diary date
BETT 2003
11-18 January
EMAP: 0207 8740200

Stressed out

Over 90 per cent of pupils suffer school-related stress with concerns about doing well topping the list, research from RM suggests. However, parents don't see eye to eye with their children about the reasons for stress.

The survey of 266 UK children aged 7 to 16 and 256 parents, found that 46 per cent of pupils were concerned about doing well at school however 51 per cent of parents said they thought their children worried most about friendships at school. Under one fifth of parents thought their children were worrying about their future education while this was a concern for 37 per cent of the children surveyed.

A spokeswoman for the Department for Education said the government was committed to helping young people face a wide range of issues: "The Connexions service plays an important role in this, providing one-to-one support and advice on a wide range of issues that affect their present and future education."

Super information

Sheffield was the venue for 23 major e-learning companies to showcase their applications and paint the future for education. The IMS Global Learning Consortium was formed in 1997 as a non-profit organisation and created when educators, government agencies and vendors realised that the lack of industry-wide technical standards prevented Internet and multimedia technology from transforming learning. To find out more, find your way to **www.imsglobal.org**

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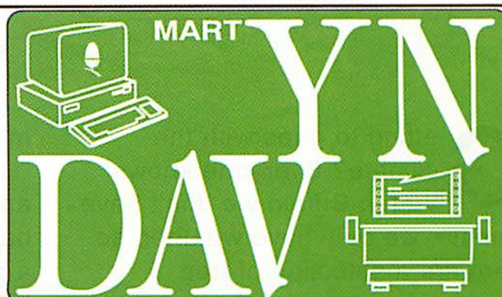
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	Magpie CD	£77.55	[illegible]
	PendownDTP	£72.85	[illegible]
	Pinpoint 2	£85.77	[illegible]
	Revelation 2	£77.55	£19.99
Landmarks Series	Pinpoint Jr.	£51.07	£9.99
Landmarks Series	Aztecs	£34.07	[illegible]
Landmarks Series	Civil War	£34.07	[illegible]
Landmarks Series	Columbus	£34.07	[illegible]
Landmarks Series	Rain Forest	£34.07	£9.99
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Look & Read Series	Sky Hunter	£34.07	[illegible]
Look & Read Series	Skywatch	£34.07	[illegible]
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Wet, wet, wet

Getting to grips with the climate? Everyone knows that in Britain we don't have climate, we only have weather, so here are a selection of free weather resource for you to gather from the Web for free.

A-Z of Weather Questions

www.usatoday.com/weather/index/windex.htm

One of the best aspects of this site is a real resident authority with the name of Jack Williams. In addition there is a global temperature index, as well as articles on African weather and climate, air pollution, acid rain, and a huge section on Antarctica from polar science and daily life to tourism. Then there are sections on aviation weather, basic weather science and careers in meteorology.

I liked their coverage of El Ni˜o and definitions of the terms we bandy about all the time, as well as a history of weather forecasting. A large and varied site with a very accessible section on humidity and another (much more fascinating one) on hurricanes. I really enjoyed this site as it has something for everyone from science and the sun's position in the sky to fables and folklore and even the thrills of tornado chasing.

Global Warming

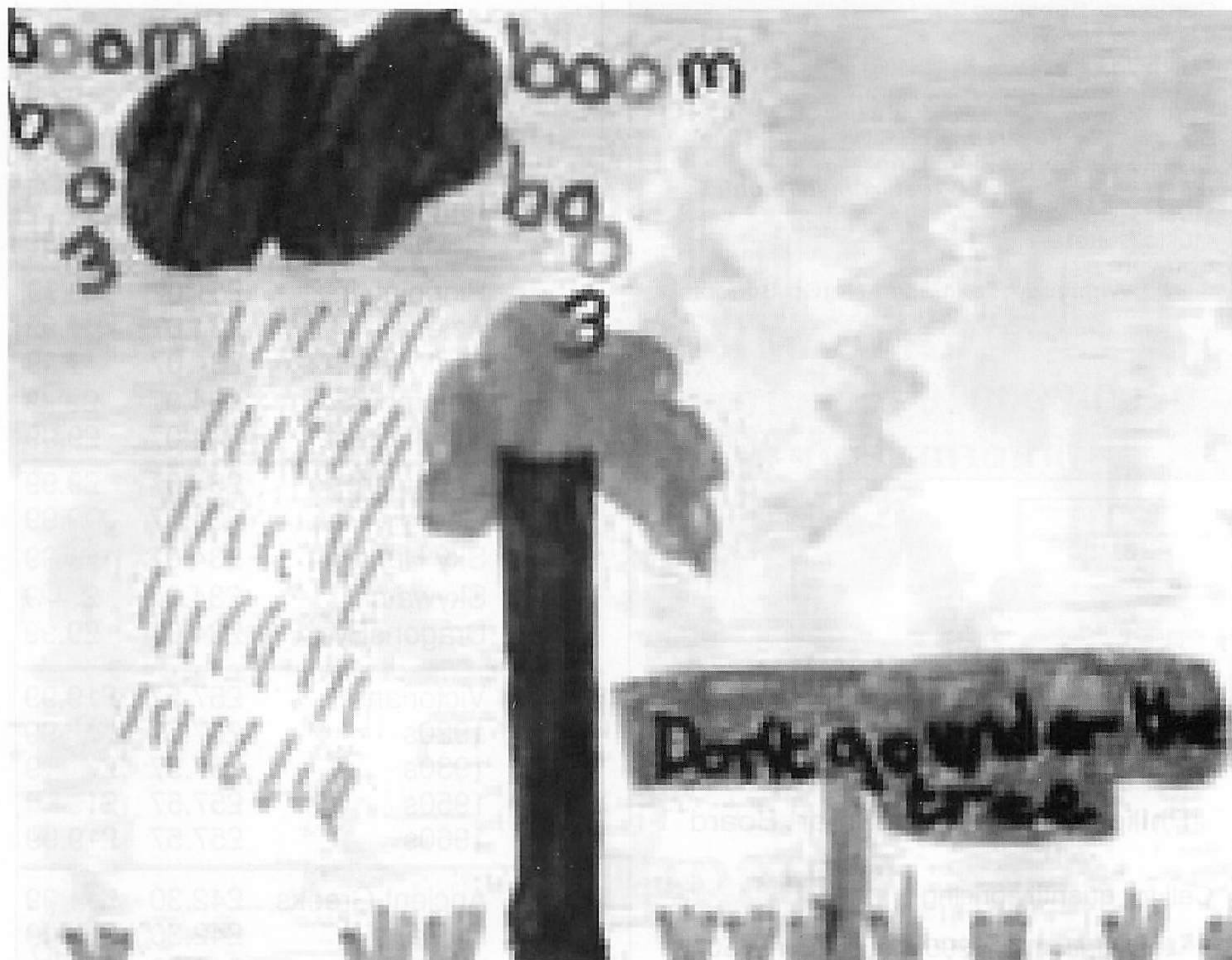
www.epa.gov/globalwarming/kids/

Designed and written for kids in minds, it makes a great stop for non-specialists. Nice to look at there are features on what global warming, and weather, an excellent feature on the greenhouse effect complete with diagrams, as well as features on the climate system, how we can change the *climate* and why. I particularly liked the Climate Detectives with information on weather stations, balloons, tree rings, ocean buoys, sediment analyses and tree rings.

Extreme Weather

www.wildweather.com

Updated daily you can find information and images on extreme weather conditions all around the world. Reports and images are presented in a news-reader style and as such makes a good literacy as well as geography resource. They also host an excellent library of extreme weather photographs categorised by type of weather.





World Weather News

www.cnn.com/WEATHER

Regular updates are essential and CNN delivers but not in as much detail as the Wild Weather site, but it provides a good range of images and links to in-depth reports for those who need more detail. There are the interesting extras too such as airspace violations as well as forecasts, temperatures, satellite and radar information for the world. Look out too for special reports such as the one on the Hurricane Season 2002.

Local Weather

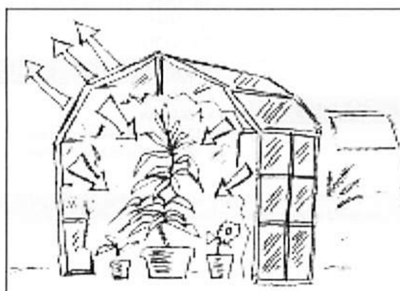
www.bbc.co.uk/lincolnshire/weather/

The BBC site is always a good resource, but look at the regional sites too. Of particular note is Lincolnshire desirous of celebrating their dramatic coastline and wide open spaces. There are general pieces such as what stargazers should be looking for and then nice features where children can exhibit their drawings of the weather.

Greenhouse Effect...

The greenhouse effect is the rise in temperature that the Earth experiences because certain gases in the atmosphere (water vapor, carbon dioxide, nitrous oxide, and methane, for example) trap energy from the sun. Without these gases, heat would escape back into space and Earth's average temperature would be about 60°F colder. Because of how they warm our world, these gases are referred to as greenhouse gases.

Have you ever seen a greenhouse? Most greenhouses look like a small glass house. Greenhouses are used to grow plants, especially in the winter. Greenhouses work by trapping heat from the sun. The glass panels of the greenhouse let in light but keep heat from escaping. This causes the greenhouse to heat up, much like the inside of a car parked in sunlight, and keeps the plants warm enough to live in the winter.



Adults too have a site for the best of Mother Nature in Lincolnshire and beyond. As well as the latest daily forecast and tide times.

Weather Cams

www.weatherimages.org/weathercams

There are a good number of sites with weather cams in the US, but this site provides both US and world cams. So if you want to see what's happening with your own eyes in the Adriatic, Andorra, Antarctica, Argentina, Aruba, Australia, Austria, belgium, Bermuda, Brazil, Canada, Caribbean, Chile, Croatia, Czech Republic, El Salvador, Estonia, Falklands, Finland, France, Germany, Greenland, Guam, Hungary, Ireland, Israel, Italy, Japan, Latvia to the UK and the Ukraine - this is the place to come!

Ozone Layer

www.atm.ch.cam.ac.uk/tour

Hosted by the Centre for Atmospheric Science at Cambridge University, the tour of the ozone layer is split into four parts which you can follow systematically or dip in and out of and its designed to make that easy.

A glossary can be found on the buttons on the bottom of the each page of the tour and linked to key terms and phrases in the text - the glossary opens in a separate window so that you can keep it for reference while you read. Images and movies are provided to illustrate the text as you read about the discovery of the ozone hole, recent ozone loss, the science behind it all and the latest research being done at Cambridge.

Pam Turnbull
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Hacker central

Many of us who went through school before desktop computers became the vogue came into direct contact with interesting mainframe and mini-computer operating systems. I suspect that all of us who had this experience took time trying to break past the ordinary user levels and get into the priviledge modes ... just to see what would happen.

At a guess I would say most of us failed. Kevin Mitnick didn't fail, from the word go he had a successful hacking career. Until he was finally caught. He was released in 1998 and decided it would be more profitable to become a consultant on computer security and, in the way of things, write a book about it.

"The Art of Deception" is that book and it makes a damn good read which is explained by the fact that this book is partly co-written by William Simon a successful fiction and film writer.

The book itself 350-odd pages laid out in a fairly large font but that certainly makes it an easier read though nothing about this book requires really intense reading. It is a book you can dip into at almost any point and read a fascinating story about how some business or other was broken into by a hacker or social engineer.

Social Engineer? A new term on me and frankly not one I found particularly rolled off the tongue. It's a fancy name for a con-man. The reason for the term is that a con-man is someone who uses a person's social behaviour and engineers the results he wants from it.

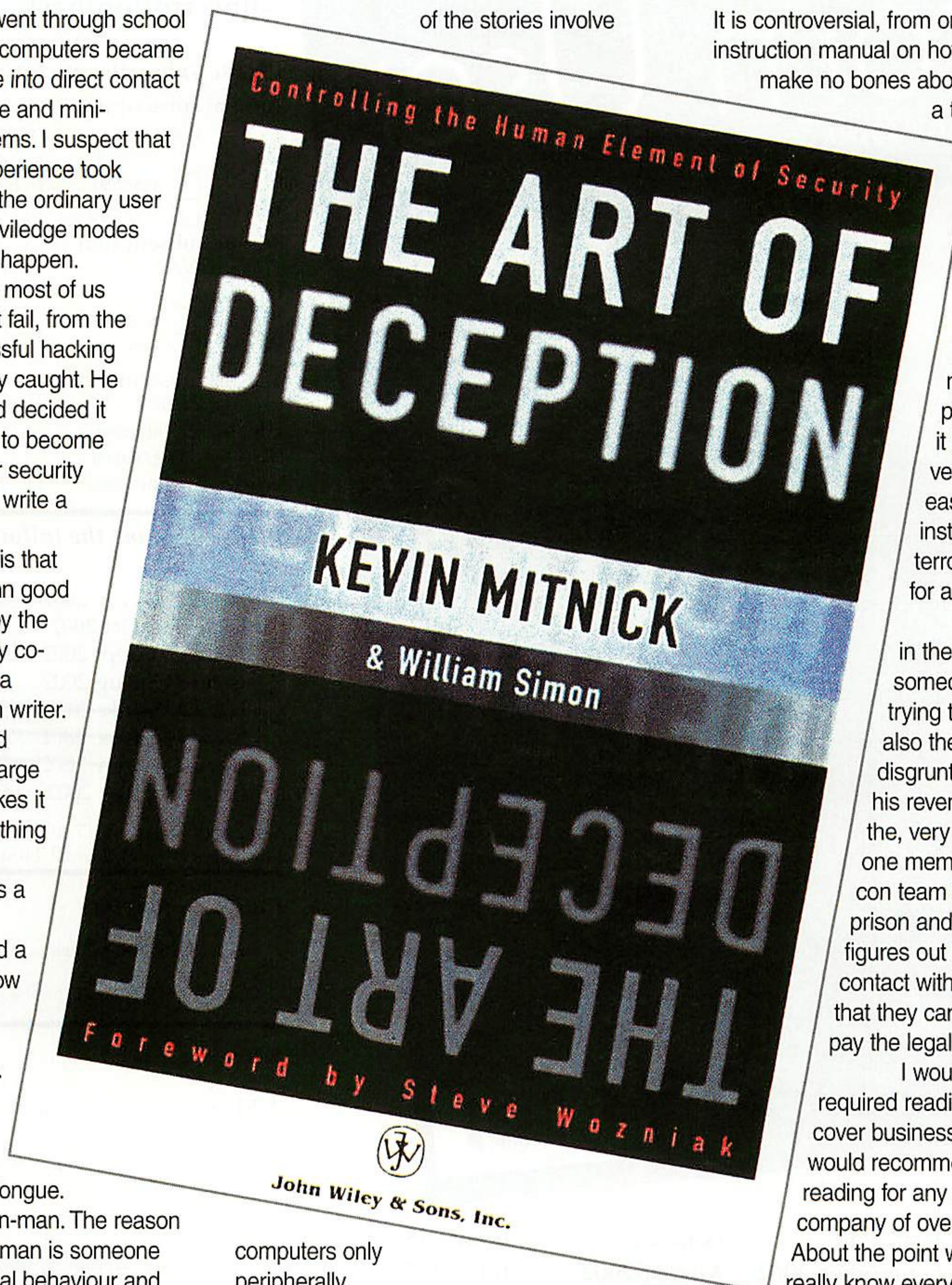
A classic example is where someone, on a bet over dinner, gets the full credit card details of someone else also sitting at the table. This is done from the table itself with just a mobile phone in less than five minutes. A con.

But I'm getting ahead of myself.

The book is divided into four sections, part 1 covers the weakest part of any organisation's security, what it is and how easy it is to circumvent.

Part 2 goes through a whole series of different scenarios on how businesses have been defrauded without technology being involved at all. Including someone who got $11 million out of one company with about three phone calls.

Part 3 goes into physical invasion and actual hacking although, to be honest, most of the stories involve computers only peripherally.



Finally Part 4 deals with what should be done to improve security in business. That improvement usually has nothing to do with technology and everything to do with stopping your staff from giving away apparently unimportant pieces of information which eventually lead to the con being successful.

After each scenario, most of them based on real life events and dramatised to make them story-like, Mitnick analyses what was actually done and how, and then usually discusses how better security-mindedness in the staff would have prevented it.

Some of the stories are amusing but I was always left with an underlying bad taste in my mouth. We are talking about people who deliberately deceive others to reach dishonest ends.

Of course this is a perfect book to publish. It is controversial, from one viewpoint it is an instruction manual on how to be con-artist. I'll make no bones about it, it really is such a thing. You can read this and learn what you would need to do to get critically important information out of a business.

But you would have to be criminally minded in the first place to make use of it in that way. To be very topical, it could easily be used as an instruction manual for terrorism, or alternatively for a freedom fighter.

Not every story in the book is about someone on the outside trying to get in. There is also the story of the disgruntled employee getting his revenge on his boss, and the, very amusing, tale where one member of a two-man con team has been put in prison and the other one figures out how to get in direct contact with him by phone, so that they can plan another con to pay the legal fees.

I would expect to see it as required reading on courses that cover business security. In fact I would recommend it as required reading for any staff member in a company of over 30 employees. About the point where you don't really know everybody in the company.

Should you read this book? On several levels the answer has to be yes. If you run your own business, work in one, or just want a good read, this is worth it.

Name: The Art of Deception
ISBN: 0-471-23712-4
Price: £19.95

Steve Turnbull
stevet@acornuser.com

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- Getting it together with USB
- The Wakefield Show in full
- The TEK review
- Going transparent with Artworks
- S-Base & Dr Wimp

Issue 247 June 2002

- Going portable with Riscstation
- How to choose fonts for the best
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246 May 2002

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Strings of Utils

First of all I would like to say thank you to everyone, and there were many of you, who provided the necessary information about, and copies of, the StringUtils module requested by Robin Humphries in the October 2002 issue of Acorn User. Thank you.

Poor responses

I have read in Acorn User from time to time adverse comments about the "Acorn World". Being in the market to update my ageing but still working A3010 I wrote to three companies and sat back waiting for the quotes, ideas and suggestions to help in my quest.

Much to my surprise two of the companies, both of which advertise in your magazine (one big and one small but local to me) were very unhelpful. The small one didn't bother to reply at all the bigger one just sent a price list.

This really isn't the kind of service I would expect from companies who are presumably in the market to make money from selling goods. Why should anyone else bother making the hardware if the companies who are supposed to sell it don't bother even trying?

The third company was CJE and I spent two hours with Chris Evans in Worthing. Not only did he produce some quotes for me, he took the trouble to phone me to discuss my requirements. The result is a large order in the pipeline with possibly more to come and a satisfied, if somewhat drained, customer whose every answer was expertly answered. And I haven't been paid to write this letter, he doesn't even know I have.

Stephen Rose
Surrey

More trouble at mill

(The author of this letter originally indicated it wasn't for publication. However in light of the one above I think it is appropriate. Identifying details have been adjusted or omitted.)

In your June editorial you exhorted us in quite unequivocal terms to make better use of our Acorn dealers. In October we are berated for abusing their expertise and willingness to help. Am I the only reader to find the tone of these editorials rather too much like a lecture to a group of naughty school children?

You should consider the other side of the RISC OS coin. As an enthusiastic but largely non-technical user of Acorn machines I have tried to do my bit and put my money where my mouth is by subscribing to various schemes, support networks, periodicals and so on. I use my Acorn dealer who is a helpful and nice person. But I could fill up pages on instances where I have felt like giving up and deserting to the PC platform.

Software that is (still after three years) full of bugs; letters that go unanswered (the record is six times before a reply, which was curt and unhelpful); a dealer that can't supply me with an external Zip drive ("can't be done") but I managed to get one after a phone call to another dealer; software with no active development that costs hundreds of pounds to upgrade; and so on.

Perhaps you should bear in mind that it is not always us consumers who "could do better" and that there is a real need in some areas for customer service to be given a higher priority. I stay with RISC OS because in my view it is simply better in nearly all ways to use. But my loyalty is wearing thin.

Name and address withheld.

Database question

Is there a decent database program for RISC OS?

Years ago I used Flexifile from the now defunct Minerva software and found it excellent, easy to use and extremely flexible. Unfortunately when I upgraded to RISC OS 4 I found some problems with printing and if I tried the preview function the computer froze and all I could do was turn it off. It is also not millennium compliant so I had to stop using it.

Recently I became treasurer of a club and I need to keep a list of members with their addresses whether they have paid their subscriptions and so on. So I need a database again. I have tried DataPower which is quite elaborate but not nearly as flexible as Flexifile, the TextEase database is not sufficiently sophisticated.

I don't know of anything else I could use so I've gone back to Flexifile with a note stuck to the computer to remind what can and can't do. It works but I would really like an updated program.

A database is one of the basic computer programs and I am surprised at the apparent gap in the market.

Peter Wotton
Herts

It was the last paragraph that really got my goat, I admit it. What has Steve Turnbull been writing about for the last ten months? I wrote to Mr Wotton and pointed out the existence of S-Base and he replied saying that he didn't want a programmable database.

So I sit here peeved. I understand that what Mr Wotton actually wants is Flexifile, he understands how to use it and is uncomfortable changing. Nothing that is not Flexifile will do. So has anyone done any fixes for it? I seem to recall a millennium fix for the Delta (?) system that Flexifile is based on.

But to say there is a gap in the market when there are three alternatives, two of which he has mentioned himself! It's like saying there are no cars because nobody is making DAF 55's anymore.

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